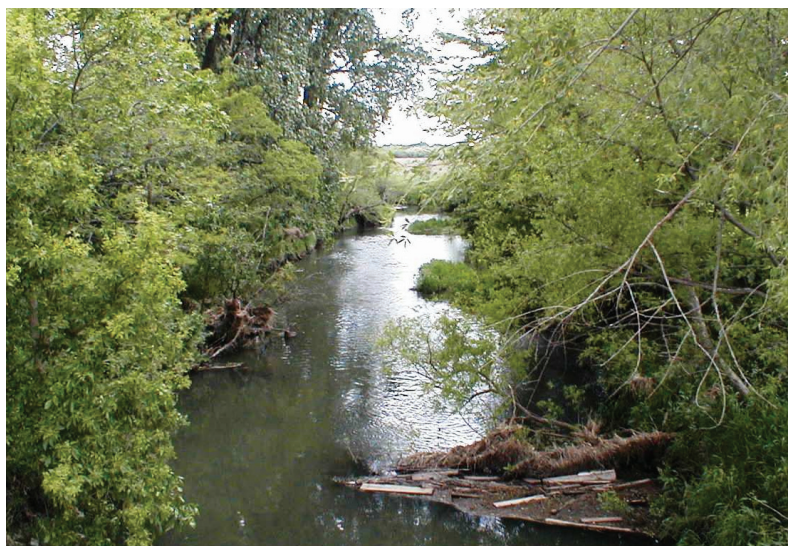




Water quality Data from two Agricultural Drainage Basins in Northwestern Indiana and Northeastern Illinois: I. Lagrangian and Synoptic Data, 1999-2002



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Cover photograph: Top photo, Iroquois River at the State Highway 16 bridge near Brook, Indiana, on April 3, 2002. Bottom photo, Sugar Creek at the State Highway 71 bridge near Raub, Indiana, on June 9, 2003.



In cooperation with U.S. Department of Agriculture

Water-quality Data from two Agricultural Drainage Basins in Northwestern Indiana and Northeastern Illinois: I. Lagrangian and Synoptic data, 1999-2002

By Ronald C. Antweiler, Richard L. Smith, Mary A. Voytek, John-Karl Böhlke, and Kevin D. Richards

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Conversion Factors

Multiply	By	To obtain
Length		
inch (in.)	2.54	centimeter (cm)
inch (in.)	25.4	millimeter (mm)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
Volume		
gallon (gal)	3.785	liter (L)
gallon (gal)	0.003785	cubic meter (m ³)
cubic foot (ft ³)	0.02832	cubic meter (m ³)
Flow rate		
acre-foot per day (acre-ft/d)	0.01427	cubic meter per second (m ³ /s)
cubic foot per second (ft ³ /s)	0.02832	cubic meter per second (m ³ /s)

Temperature in degrees Celsius (°C) may be converted to degrees Fahrenheit (°F) as follows:
 $^{\circ}\text{F} = (1.8 \times ^{\circ}\text{C}) + 32$

Temperature in degrees Fahrenheit (°F) may be converted to degrees Celsius (°C) as follows:
 $^{\circ}\text{C} = (^{\circ}\text{F} - 32) / 1.8$

ABBREVIATED WATER-QUALITY UNITS

Chemical concentration and water temperature are given only in metric units. Chemical concentration in water is given in milligrams per liter (mg/L), micrograms per liter (µg/L), or nanograms per liter (ng/L). Milligrams per liter is a unit expressing the solute mass (milligrams) per unit volume (liter) of water. One thousand micrograms per liter is equivalent to 1 milligram per liter. One thousand nanograms per liter is equivalent to 1 microgram per liter. For all concentrations in this report, concentrations in milligrams per liter are about the same as for concentrations in parts per million. Specific conductance is given in microsiemens per centimeter at 25 degrees Celsius (µS/cm at 25°C).

ABBREVIATED CHEMICAL NAMES

Throughout this report, chemical elements and compounds are abbreviated according to their chemical symbols. The table below describes these.

Symbol	Name	Symbol	Name	Symbol	Name
Al	Aluminum	H	Hydrogen	Rb	Rubidium
As	Arsenic	HCO ₃	Bicarbonate	Re	Rhenium
B	Boron	Hg	Mercury	S	Sulfur
Ba	Barium	Ho	Holmium	SO ₄	Sulfate
Be	Beryllium	K	Potassium	Sb	Antimony
Bi	Bismuth	La	Lanthanum	Se	Selenium
Br	Bromine	Li	Lithium	Si	Silicon
C	Carbon	Lu	Lutetium	SiO ₂	Silica
CH ₄	Methane	Mg	Magnesium	Sm	Samarium
CO ₃	Carbonate	Mn	Manganese	Sr	Strontium
Ca	Calcium	Mo	Molybdenum	Ta	Tantalum
Cd	Cadmium	N	Nitrogen	Tb	Terbium
Ce	Cerium	N ₂ O	Nitrous Oxide	Te	Tellurium
Cl	Chlorine	NH ₄	Ammonium	Th	Thorium
Co	Cobalt	NO ₂	Nitrite	Ti	Titanium
Cr	Chromium	NO ₃	Nitrate	Tl	Thallium
Cs	Cesium	Na	Sodium	Tm	Thulium
Cu	Copper	Nd	Neodymium	U	Uranium
DOC	Dissolved Organic Carbon	Ni	Nickel	V	Vanadium
Dy	Dysprosium	O	Oxygen	W	Tungsten
Er	Erbium	P	Phosphorus	Y	Yttrium
Eu	Europium	PO ₄	Phosphate	Yb	Ytterbium
Fe	Iron	Pb	Lead	Zn	Zinc
Gd	Gadolinium	Pr	Praseodymium	Zr	Zirconium

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Abstract

Methods of data collection and results of analyses are presented for Lagrangian and synoptic water-quality data collected from two agricultural drainages, the Iroquois River in northwestern Indiana and Sugar Creek in northwestern Indiana and northeastern Illinois. During six separate sampling trips, in April, June and September 1999, May 2000, September 2001 and April 2002, 152 discrete water samples were collected to characterize the water chemistry over the course of 2 to 4 days on each of these drainages. Data were collected for nutrients, major inorganic constituents, dissolved organic carbon, trace elements, dissolved gases, total bacterial cell counts, chlorophyll-*a* concentrations, and suspended sediment concentrations. In addition, field measurements of streamflow, pH, specific conductance, water temperature, and dissolved oxygen concentration were made during all trips except April 1999.

Introduction

Scientists first recorded hypoxic, or low-oxygen, zones on the continental shelf of the northern Gulf of Mexico in the 1970s (Turner and Allen, 1982), and began systematic assessments of these zones in 1985 (Rabalais and others, 1991). Studies have concluded that nutrient loads carried by the Mississippi River are one of the dominant causes of this hypoxia (Bierman, and others, 1994; Justic and others, 1993, 1995a, b; Rabalais, 1998; Rabalais and others, 1996, 1998; Turner and Rabalais, 1991, 1994). Other studies (for example, Antweiler and others, 1996a; Goolsby and others, 1999; Carey and others, 1999; Battaglin and others, 2001) determined that one of the chief sources of these nutrients within the Mississippi River was agricultural practices in the Upper Mississippi River basin (that part of the Mississippi River basin above the confluence with the Missouri River, herein called UMRB). At the same time, modeling studies (for instance, SPARROW, Smith and others, 1997; and Howarth and others, 1996), based on current

understanding of nutrient processing in streams, indicated that large amounts of nitrate should have been removed by natural denitrification reactions within the surface waters of the UMRB, especially in the headwaters and small streams. These studies indicated that nitrate concentrations in some parts of the UMRB should be lower than they are. The apparent inconsistencies between the model results and observations led the U.S. Geological Survey (USGS) to undertake a study, in cooperation with the U.S. Department of Agriculture, to determine the sources and fate of nitrogen in representative headwaters streams of the UMRB. Accordingly, two small predominantly agricultural drainage basins of the Illinois River (one of the chief tributaries of the Mississippi River in the UMRB) were selected for in-depth intense study. These two basins are a portion of the Iroquois River in western Indiana and one of its tributaries, Sugar Creek, in western Indiana and eastern Illinois (fig. 1). The chief purpose motivating the overall study was to collect data both spatially and temporally along each of the two selected drainages, with an ultimate aim to understanding in-stream processes, particularly involving nitrogen.

Purpose and Scope

This report describes data collected along two specific reaches (one in each drainage basin) during each of six sampling trips in 1999-2002. During these six sampling trips, water samples were collected longitudinally along each reach in either a Lagrangian or synoptic manner over the course of the sampling trip, resulting in a total of 152 samples. The temporal component was examined by collecting diel data during four of these sampling trips at one specific location on each drainage (Antweiler and others, 2005a), and data from a biweekly sampling effort which spanned 28 months (Antweiler and others, 2005b). Additional work, including tracer studies, ground water analyses, and incubation studies also was performed at these sites. This report only describes the data which relate to the spatial component of the study.

Acknowledgments

We wish to thank the contributions of Ronald Knapp and Brad Reinking of the USGS Indiana Water Science Center; George Groschen, Mike Friedel, Steve Stammer and Dave Dupré of the USGS Illinois Water Science Center; JoAnn Holloway, Terry Plowman, Dave Roth, Dale Peart, Howard Taylor, Ryan Bonelli, Julie Kirshstein, Seanne Buckwalter, and Deb Reper of the USGS National Research Program; Charles Patton of the USGS National Water Quality Laboratory; and Andy Laursen of Rutgers University. We also wish to thank George Groschen and Phillip Verplanck for their technical reviews of the manuscript.

Sampling Locations

Figure 1 shows the location of the two study reaches. The Iroquois River reach went from the USGS stream gage near Foresman, Ind. (USGS stream gage number 05524500) – where Indiana State Highway 55 crosses the river approximately 5 kilometers east of Brook, Ind. – to the Newton County (Ind.) Fairgrounds bridge crossing approximately 6 kilometers north of Kentland, Ind. This reach spanned approximately 21 kilometers of the river and consisted of seven sampling sites, which were (more or less) evenly spaced (fig. 2). Along this reach, there are no perennial surface water additions to the river (that is, tributaries) although during the spring runoff there are numerous ditches and pipes that drain into it. The sampling sites were established where bridges crossed the river, mainly because of accessibility and sampling logistics. Detailed descriptions of the location of the sampling sites can be found in table 1. Figure 3 shows the Iroquois River at two of the sampling sites in April 2002, during high flow.

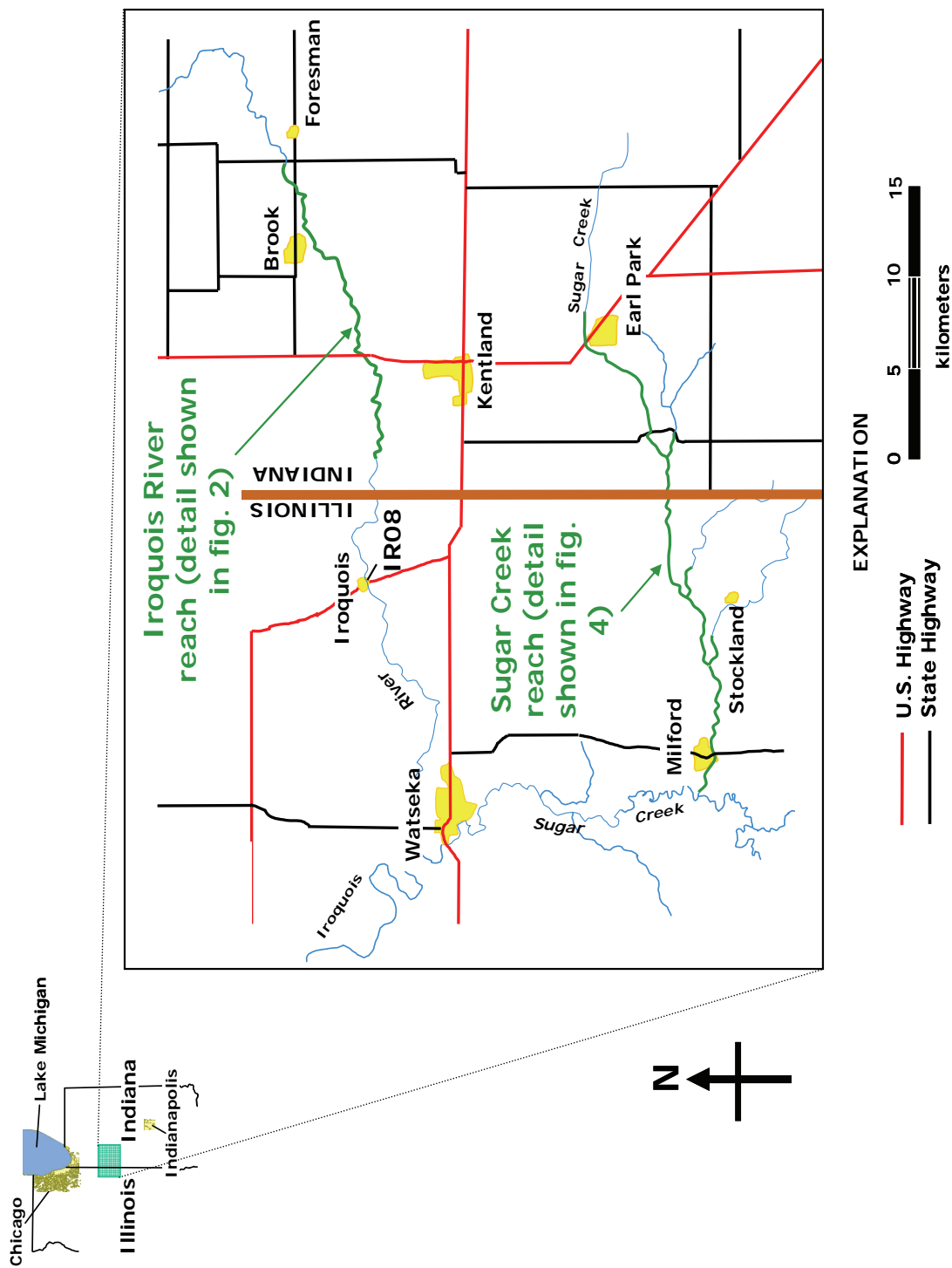


Figure 1. Location of the two study reaches

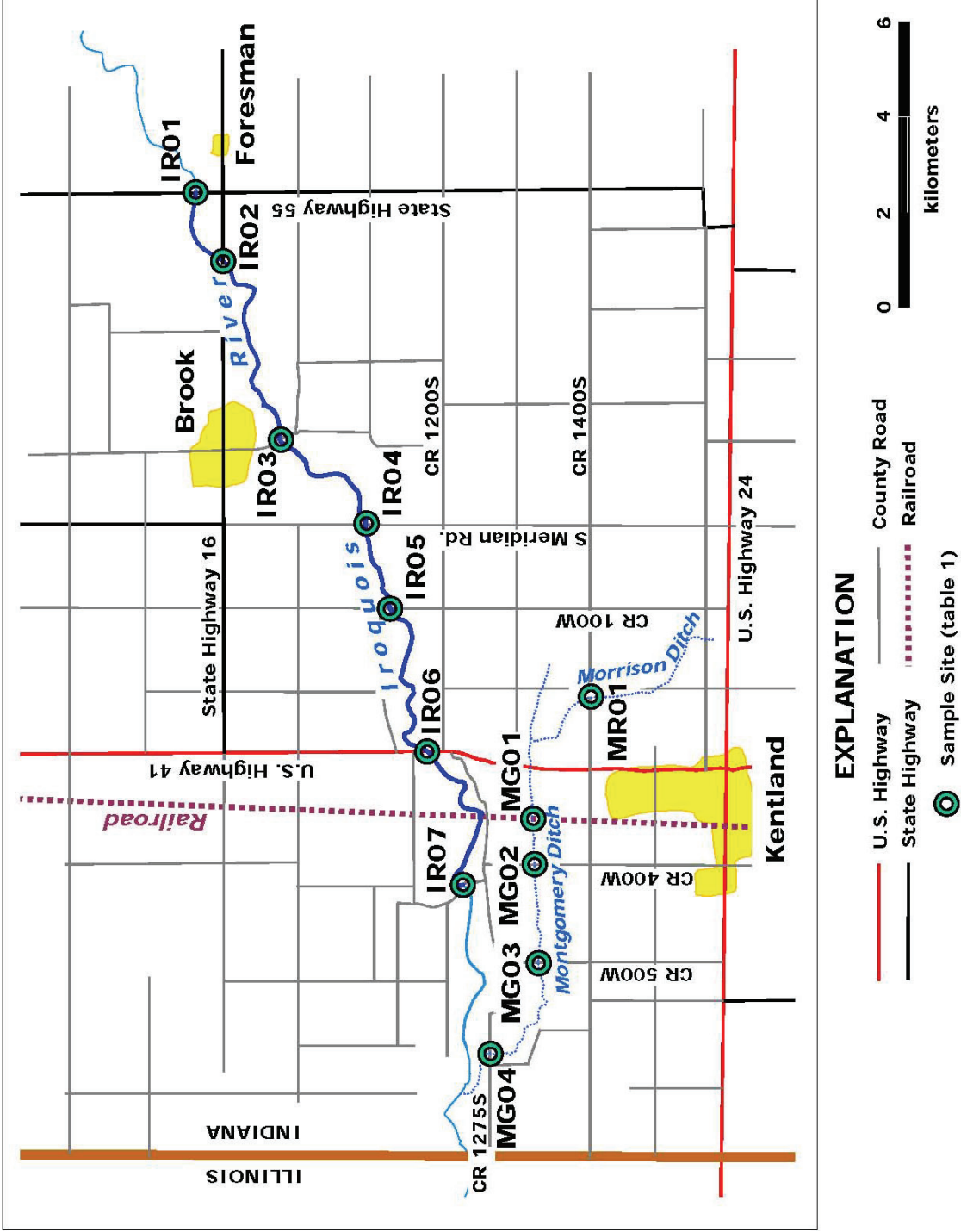


Figure 2. Location of the sampling sites in the Iroquois River reach.

A.



B.



Figure 1. Photographs of the Iroquois River in April 2002. (A) View looking downriver at IR01, State highway 55 bridge, near Foresman, Ind. Channel is about 40 meters wide; (B) View looking downriver at IR07, Newton County (Ind.) Fairgrounds bridge. Channel is about 50 meters wide.

The Sugar Creek study went from the CR 400W bridge crossing in Benton County, Ind., approximately 2 kilometers northeast of Earl Park, Ind. to just above (approximately 100 meters) the confluence of Mud Creek 3, about 2 kilometers west of Milford, Ill. This reach spanned approximately 38 kilometers of the creek and consisted of 10 sampling sites (fig. 4). Each of the sampling sites except the last occurred at bridge crossings. Two perennial tributaries enter the creek along this reach and each was sampled. Unfortunately, both of these tributaries – along with the tributary just beyond the reach – were named Mud Creek. Thus, there are three Mud Creeks which enter Sugar Creek within the span of 30 kilometers. For clarity, the first Mud Creek, which enters Sugar Creek approximately 2 kilometers east of the Illinois-Indiana state line, is referred to as Mud Creek 1; the second Mud Creek, which enters Sugar Creek about 5 kilometers west of the state line, is referred to as Mud Creek 2. The third Mud Creek, which enters Sugar Creek beyond the reach, is referred to as Mud Creek 3. Each of the first two Mud Creeks was sampled as closely as possible to its confluence, but Mud Creek 3 was not sampled. In addition, a large (unnamed) tributary (SCT3), that contained water even into the summer, was sampled during four of the six trips. This ditch enters Sugar Creek about 4 kilometers to the east of Milford, Ill. Detailed descriptions of the location of the sampling sites can be found in table 1. Figure 5 shows Sugar Creek at two of its sampling sites in April 2002.

In addition to the samples collected at the sites described above, this report also contains the analyses from eleven grab samples collected at seven drainage ditches and tile drain pipes in the vicinity of the Iroquois River and Sugar Creek drainages. Detailed descriptions of the location of these samples can be found in table 2, and their locations can be found on the maps in figures 1-3.

Sampling Times and Types

Data were collected during six sampling trips, three of which were Lagrangian and three of which are designated as synoptic. As used in this report, “Lagrangian sampling” refers to sampling which attempted to follow a parcel of water as it moved downstream. Thus, sampling times were dictated by the velocity of the water in each reach, and occurred whenever it was estimated that the water parcel had arrived at the sampling site (even if this happened in the middle of the night). The three sampling trips which are called “Lagrangian” occurred June 22-26, 1999, September 13-15, 1999, and May 8-11, 2000.

As used in this report, “synoptic sampling” refers to sampling which attempted to collect samples at all sites along a given reach as closely as possible to the same time. Because of logistical reasons, it typically took as many as about 8 hours to collect synoptic samples along each reach. The three sampling trips which are designated as “synoptic” occurred April 20, 1999, September 12-13, 2001, and April 3-4, 2002. The April 1999 sampling trip was actually a reconnaissance trip and therefore consisted of only five sampling sites on the Iroquois River and two on Sugar Creek; in addition, because it was a preliminary assessment, the complete set of samples which was collected during the other trips was not collected during this trip. Table 3 summarizes the sampling times for all of the samples described in this report.

Table 1. Sampling sites

Site Name (fig. 2 and 4)	Site Location	Latitude	Longitude	Distance, km*	Sampling trip (table 3)
IROQUOIS RIVER SITES					
IR01	Indiana Highway 55 bridge at U.S. Geological Survey stream gage (05524500) near Foresman, Ind.	40° 52.20'	87° 18.03'	0.0	All trips
IR02	Indiana Highway 16 bridge near Brook, Ind.	40° 51.95'	87° 19.39'	2.0	All but April 1999
IR03	Newton Co., Ind., CR 100E bridge, south of Brook, Ind.	40° 51.30'	87° 21.63'	5.9	All trips
IR04	S. Meridian Road bridge, Newton Co., Ind., near Brook, Ind.	40° 51.20'	87° 22.90'	9.4	All but April 1999
IR05	Newton Co., Ind., CR 100W bridge, near Brook, Ind.	40° 49.93'	87° 24.16'	12.0	All trips
IR06	U.S. Highway 41 bridge, near Kentland, Ind.	40° 49.21'	87° 27.19'	16.5	All but April 1999
IR07	Newton Co., Ind., Fairgrounds bridge, near Kentland, Ind.	40° 49.25'	87° 27.86'	21.1	All trips
SUGAR CREEK SITES					
SC01	Benton Co., Ind., CR 400W bridge, near Earl Park, Ind.	40° 41.91'	87° 24.08'	0.0	All but April 1999
SC02	Benton Co., Ind., CR 600W bridge, near Earl Park, Ind.	40° 40.89'	87° 26.32'	4.5	All but April 1999
SC03	Indiana Highway 71 bridge, near Raub, Ind.	40° 39.63'	87° 29.13'	9.8	All trips
SC04	Stateline Road bridge, on Ind.-Ill. Stateline	40° 39.02'	87° 31.61'	14.0	All but April 1999
SC05	Iroquois Co., Ill., CR 3000E bridge, near Stockland, Ill.	40° 38.88'	87° 33.80'	17.7	All but April 1999
SC06	Iroquois Co., Ill., CR 2800E bridge, near Stockland, Ill.	40° 38.11'	87° 35.52'	21.4	All but April 1999
SC07	Iroquois Co., Ill., CR 900N bridge, near Stockland, Ill.	40° 37.59'	87° 38.05'	26.9	All but April 1999
SC08	Iroquois Co., Ill., CR 2440E bridge, near Milford, Ill.	40° 37.18'	87° 39.75'	30.1	All trips
SC09	Illinois Highway 1 bridge, south of Milford, Ill.	40° 37.30'	87° 41.74'	34.4	All but April 1999
SC10	30 m. upstream from Mud Creek 3 confluence near Milford, Ill.	40° 37.78'	87° 43.56'	37.8	All but April 1999 and April 2002
SUGAR CREEK TRIBUTARY SITES					
SCT1	Mud Creek 1 at Indiana Highway 71 bridge, near Raub, Ind.	40° 38.74'	87° 29.06'	11.7	All but April 1999
SCT2	Mud Creek 2 300 m. upstream from confluence with Sugar Creek, near Stockland, Ill.	40° 38.24'	87° 34.89'	21.2	All but April 1999
SCT3	Unnamed tributary at Iroquois Co., Ill., CR 900N bridge, near Stockland, Ill.	40° 37.23'	87° 37.72'	28.5	All but April 1999 and September 1999

* Refers to the distance in kilometers along the river from the U.S. Geological Survey stream gage (05524500) near Foresman, Ind., for the Iroquois River; for Sugar Creek, the distance from the first sampling site near Earl Park, Ind.; for the Sugar Creek tributaries, the distance from the confluence to the tributary to the first Sugar Creek site near Earl Park, Ind.

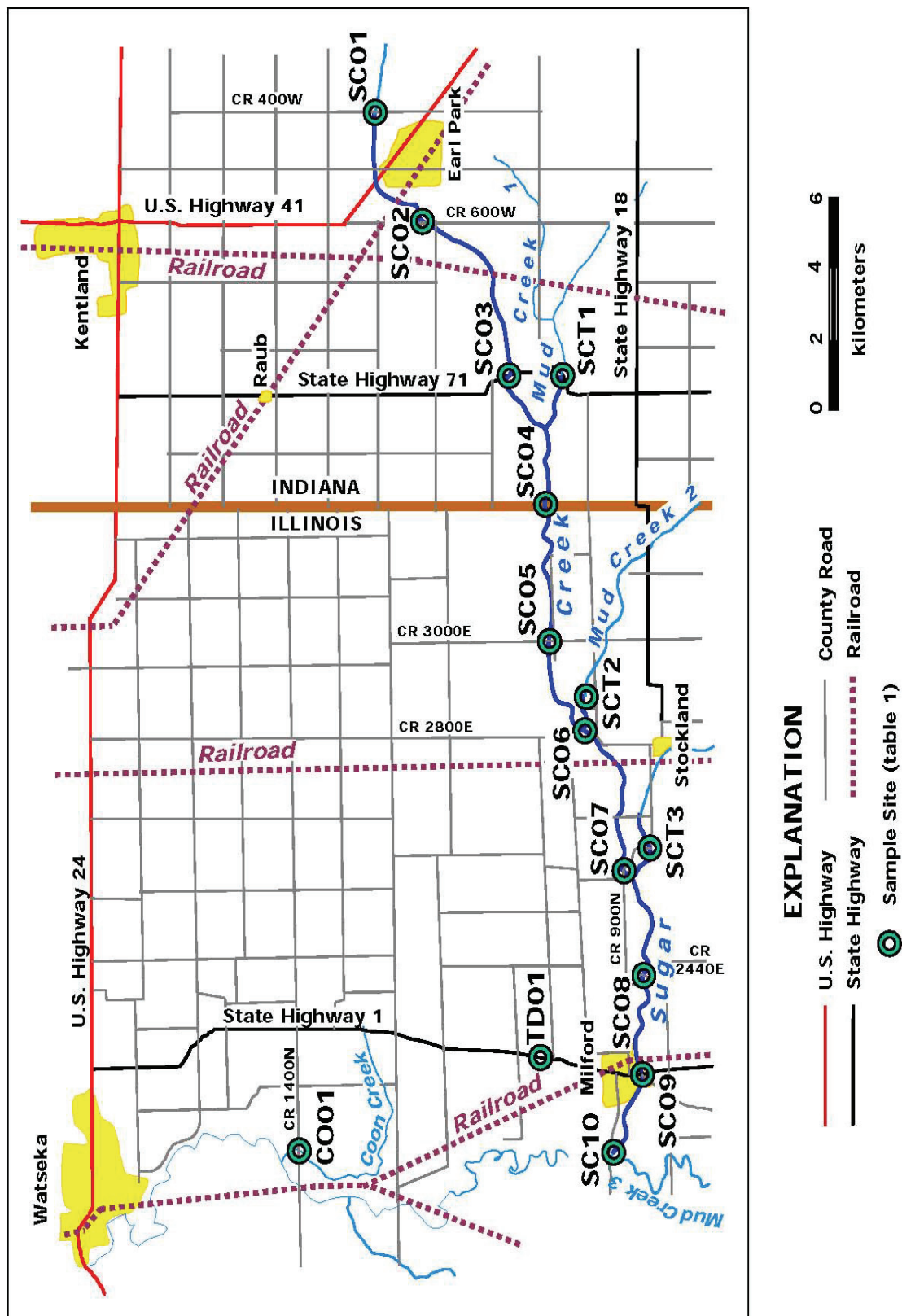


Figure 4. Location of sampling sites in the Sugar Creek reach.

A.



B.



Figure 5. Photographs of Sugar Creek in April 2002. (A) View looking downriver at SC01, County Road 400W bridge, near Earl Park, Ind. Channel was about 5 meters wide; (B) View looking upriver at SC07, County Road 900N bridge, near Stockland, Ill. Channel was about 25 meters wide.

Table 2. Miscellaneous sampling sites

Site Name	Site and Location	Latitude	Longitude	Distance, km*	Sampling Trip (table 3)
DITCH SAMPLES					
MR01	Morrison Ditch at Newton Co., Ind., CR 1400S bridge, near Kentland, Ind.	40° 47.67'	87° 25.31'	9.4	April 1999
MG01	Montgomery Ditch at Railroad bridge near Kentland, Ind.	40° 48.30'	87° 26.93'	6.2	April 2002
MG02	Montgomery Ditch at Newton Co., Ind., CR 400W bridge, near Kentland, Ind.	40° 48.23'	87° 27.50'	5.4	April 2002
MG03	Montgomery Ditch at Newton Co., Ind., CR 500W bridge, near Kentland, Ind.	40° 48.35'	87° 28.66'	3.8	April 2002
MG04	Montgomery Ditch near mouth at Newton Co., Ind., CR 1275S bridge, near Kentland, Ind.	40° 48.80'	87° 30.12'	1.0	April 1999, April 2002
TILE DRAIN SAMPLES					
ID01	Ditch draining into the Iroquois River from the south at the IR01 site, near Foresman, Ind.	40° 52.20'	87° 18.03'	na	April 2002
ID02	Ditch draining into the Iroquois River from the north at the IR07 site, near Kentland, Ind.	40° 49.25'	87° 27.86'	na	April 2002
TD01	Tile drain emptying into ditch draining (eventually) into Sugar Creek at Illinois Highway 1 culvert, approximately 2 km north of Milford, Ill.	40° 39.00'	87° 41.68'	na	April 1999
TD02	Tile Drainage from drain pipe on north side of Montgomery Ditch at the MG02 site, near Kentland, Ind.	40° 48.23'	87° 27.50'	na	April 2002
OTHER STREAMS AND SITES					
IR08	Iroquois River at Iroquois gage at U.S. Highway 52 bridge, near Iroquois, Ill.	40° 49.35'	87° 34.90'	33.1	April 1999
CO01	Coon Creek near mouth at Iroquois Co., Ill., 1400N bridge, near Watseka, Ill.	40° 42.89'	87° 43.53'	na	April 1999

* Refers to the distance in kilometers to the confluence of Montgomery Ditch and the Iroquois River (Montgomery Ditch enters the Iroquois River 26.3 kilometers downriver from the U.S. Geological Survey stream gage (05524500) near Foresman, Ind., at IR01; Morrison Ditch empties into Montgomery Ditch) for MR01 and MG01-MG04; for IR08, refers to the distance in kilometers along the Iroquois River from the USGS gage near Foresman, Ind. For the others, distance is irrelevant and is designated "na" ("not applicable").

Table 3. Sampling times and type of sampling trip

["grabs" and "composites" are described in the section entitled "Methods of Collection"]

Sampling Trip and Type	Iroquois River	Sugar Creek	Miscellaneous
April 1999 synoptic	4/20/99 @ 13:00 to 4/20/99 @ 14:50 5 grabs	4/20/99 @ 16:25 to 4/20/99 @ 17:00 2 grabs	4/20/99 @ 9:50 to 4/20/99 @ 15:55 4 grabs
June 1999 Lagrangian	6/25/99 @ 13:15 to 6/26/99 @ 17:30 7 composites, 10 grabs	6/22/99 @ 17:00 to 6/24/99 @ 14:10 13 composites, 13 grabs	(None)
September 1999 Lagrangian	9/13/99 @ 16:15 to 9/15/99 @ 20:40 7 grabs	9/13/99 @ 18:30 to 9/15/99 @ 1:20 12 grabs	(None)
May 2000 Lagrangian	5/9/00 @ 14:20 to 5/11/00 @ 0:30 7 composites, 7 grabs	5/8/00 @ 13:20 to 5/9/00 @ 17:15 13 grabs	(None)
September 2001 synoptic	9/13/01 @ 8:30 to 9/13/01 @ 15:20 7 grabs	9/12/01 @ 9:20 to 9/12/01 @ 19:40 13 grabs	(None)
April 2002 synoptic	4/3/02 @ 9:50 to 4/3/02 @ 16:30 13 grabs	4/4/02 @ 8:30 to 4/4/02 @ 13:40 12 grabs	4/3/02 @ 12:30 to 4/3/02 @ 18:10 7 grabs

Methods of Collection

Samples were collected at twenty sites on the two reaches, seven on the Iroquois River, ten on Sugar Creek, and three on separate tributaries of Sugar Creek (table 1). Concurrent with the collection of samples for analysis, streamflow measurements were made at each site using standard USGS protocols (Rantz and others, 1982). This involved selecting between 15 and 25 vertical measurement locations across the channel, measuring the water depth and average velocity at each vertical, and integrating over all verticals in a section to obtain the total streamflow. During the April 1999 trip, streamflow measurements were not made; at this time, water discharge on the Iroquois River was estimated at the sampling sites by interpolating between instantaneous (and automatic) measurements made at two USGS stream gaging stations, one upstream (the Iroquois River near Foresman, Ind., USGS stream gage number 05524500) and the other downstream (the Iroquois River at Iroquois, Ill., USGS stream gage number 05525000).

In addition to streamflow, field measurements of pH, specific conductance, dissolved oxygen concentration, and water temperature were made and recorded. The pH, specific conductance, dissolved oxygen concentration, and water temperature were all measured using a YSI Model 600XL-4 parameter instrument which was calibrated daily against known standards according to standard USGS protocols (Wilde and Radtke, 1998). There were two main types of samples collected: the composite sample and the grab sample.

Composite Samples

“Composite” samples were depth- and width-integrated, collected either with a D77 sampler, or, if the river was wadeable, with a hand-held DH-81 sampler (Horowitz and others, 1994; Wilde and others, 1999). Water samples were collected at five to seven equally-spaced vertical intervals using a collapsible Teflon bag. The collection vessel had a Teflon nozzle and was oriented to always be facing upstream. Transit rates were held constant during the collection of a sample (Moody and Meade, 1992; Kelly and Taylor, 1996). The Teflon bags were either 1-L or 2-L (depending on the type of sampler used) and were emptied into a clean 8-L Teflon-coated churn. The Teflon bags were filled a sufficient number of times to collect about 6-L of water in the churn. Samples collected in this manner represent an integrated “snapshot” of the river at the time of collection, both for dissolved and particulate materials.

Grab Samples

“Grab” samples were normally collected into a pre-cleaned 2-L Teflon bottle by going to the center of flow of the channel and lowering the bottle into the water. The bottle was rinsed with river water, then filled and emptied into a clean 8-L churn three times to yield a total of 6-L of water. Grab samples only represent a true snapshot of the river if the water at the time of collection is well-mixed. In general, this rarely occurs in large rivers, especially for particulates (Meade, 1985; Moody and Meade, 1992); however, grab samples collected from the center of flow are often representative of the chemistry of the stream at that point in small watersheds and especially for dissolved constituents.

The first sampling trip (April 1999) was a reconnaissance, and all samples collected at that time were grab samples. During the second sampling trip (June 1999), both composite and grab samples were collected at all sites on both reaches. During the third trip (September 1999), composite samples were collected from the Iroquois River and grab samples were collected from

Sugar Creek. On the fourth trip (May 2000), composite and grab samples were each taken at all sites on the Iroquois River, and only grab samples were collected at all sites on Sugar Creek. Only grab samples were collected during the fifth and sixth trips (September 2001 and April 2002). In addition, on the April 2002 trip, at selected sites, grab samples were collected across the entire channel and in the backwater areas (in addition to collecting at the center of flow). These samples were collected to assess the cross-channel variability.

Additional samples were collected for dissolved gas analyses during four of the six sampling trips (all except the reconnaissance trip – April 1999 – and the last trip, April 2002). Samples collected for dissolved nitrous oxide and methane (samples for methane analysis only were collected during the September 2001 synoptic trip) were collected by one of two methods. Samples labeled as composite were collected from three equally-spaced vertical intervals (as above) using a peristaltic pump. The pump tubing was attached to a wading rod and water samples were slowly pumped from the top, middle, and bottom of each depth interval (or two depths for shallow locations). For grab samples, which were collected in duplicate or triplicate, water was obtained from the center of flow in a bucket. All water samples were collected in plastic syringes, taking care to exclude air bubbles. After filling, a needle was placed on the syringe and 20 mL injected into 30-mL serum bottles that had been fitted with thick butyl rubber stoppers and aluminum crimps and which contained 0.2 mL 12.5 normal sodium hydroxide and a helium (He) headspace.

Processing of Samples

After either grab or composite samples were collected into the cleaned churn, the churn was transported immediately from the sample site to the field laboratory (located in Kentland, Ind., less than 30 minutes away from all sample sites, fig. 2 and 3). Upon arrival at the field lab, the 6 liters were churned and subsampled by the following method. First, a 250-mL polyethylene bottle was filled for the determination of total suspended sediment. This sample was chilled after subsampling until analysis. Second, a 19-mL aliquot was subsampled by decanting from the churn spigot into a 20-mL glass bottle pre-dosed with 1 mL of formalin for the determination of total bacterial count. This sample was stored at room temperature for as many as 4 days and thereafter at 4°C until analysis.

Third, a 1-L pre-cleaned Teflon bottle was filled and filtered through a 47-mm diameter, 0.4-µm nominal pore-size glass fiber filter (GFF). The volume of water passing through the filter was recorded. The filtrate was disposed, and the GFF was frozen for chlorophyll-*a* analysis.

Fourth, a 2-L Teflon bottle was filled from the churn. The entire contents of this bottle were filtered through a 0.2-µm Gelman spiral-cap capsule filter. Out of these 2 liters, the first 400-500 mL of filtrate were discarded to acclimate the filter. Then, the following filtered aliquots were collected into pre-cleaned bottles: (1) 120 mL for trace metal analysis; this bottle was acidified with 1 mL of doubly-distilled trace-metal grade nitric acid; (2) 120 mL for mercury analysis; this bottle was preserved with 5 mL of a potassium dichromate-nitric acid solution; (3) 120 mL for nutrient analyses; this aliquot was refrigerated to 4°C immediately after filtration; (4) 60 mL for anions analysis; this aliquot was refrigerated to 4°C immediately after filtration; (5) 60 mL for dissolved organic carbon (DOC) analysis; as with anions and nutrients, this aliquot was refrigerated to 4°C after filtration.

Methods of Analysis

All samples were analyzed at USGS laboratories, the National Research Program (NRP) laboratories located in Boulder, Colo., the NRP laboratories located in Reston, Vir., and the National Water Quality Laboratories (NWQL) in Lakewood, Colo. Table 4 summarizes the methods of analysis, and also includes the method detection limits for each chemical constituent (where applicable).

Nutrients

Dissolved nitrate, nitrite, ammonium, and phosphate were determined at the USGS NRP laboratories in Boulder, Colo. in duplicate or triplicate colorimetrically on an air-segmented continuous-flow Alpkem RFA 300 system according to the methods of Antweiler and others (1996b). Nitrate plus nitrite was determined colorimetrically at 543 nanometers (nm) by diazotization with sulfanilamide and reaction with N-(1-naphyl) ethylene diamine (Greiss reaction) after reduction to nitrite with cadmium metal. Nitrite was determined by the same method without cadmium reduction. Nitrate was then computed by difference. Ammonium ion was determined colorimetrically at 660 nm by the salicylic acid analog of the indophenol blue method. Phosphate was determined at 880 nm by the phosphoantimonyl molybdenum-blue procedure. Every eight to ten determinations, standard reference samples were analyzed to assess the quality of the analyses.

Dissolved Kjeldahl nitrogen was determined at the USGS NWQL in Lakewood, Colo. by the method of Patton and Truitt (2000). In this method, organic nitrogen is converted to ammonium ions at a temperature of 370 °C with sulfuric acid, potassium sulfate and mercury (II). Therefore, in this report, Kjeldahl nitrogen refers to ammonium ions plus organic nitrogen (Patton and Truitt, 2000). Due to cost considerations, not all samples were submitted for Kjeldahl nitrogen analysis.

Total phosphorus was determined at the USGS NRP laboratories in Boulder, Colo. by inductively-coupled atomic emission analysis at 213.617 and 214.914 nm on a Perkin Elmer Optima 3300DV, multichannel emission spectrometer, using the axial view mode. Details of the system are given in Mitko and Bebek (1999, 2000).

Anions and DOC

Dissolved chloride, nitrate and sulfate were determined at the USGS NRP laboratories in Boulder, Colo. by ion chromatography on a Dionex 2002i/SP series ion chromatograph, using a carbonate-bicarbonate eluent buffer. Samples were (in general) analyzed only once, but each analysis run had at least 20 percent quality-control and standard reference samples to assess both accuracy and precision. Details of the analytical techniques can be found in Brinton and others (1996).

Total alkalinity was determined in the USGS NRP Boulder, Colo. laboratory by titration with 0.1 M sulfuric acid to a fixed point endpoint according to the techniques of Kramer (1982) using a Gran's titration calculation. Standard reference water samples were analyzed at least 20 percent of the time to assess accuracy and precision.

Table 4. Detection limits and methodologies used for the determination of chemical constituents in this study.

[mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; µg/L, micrograms per liter; µg C/L, micrograms per liter as carbon; ng/L, nanograms per liter; ICPMS, Inductively-coupled plasma-mass spectrometry; ICPAES, Inductively-coupled plasma-atomic emission spectrometry; GC, gas chromatography; IR, infrared; IC, ion chromatography; CVAFS, cold-vapor atomic fluorescence spectrometry]

Chemical constituent	Method Detection Limit	Units	Methodology	Chemical constituent	Method Detection Limit	Units	Methodology
Al	0.1	µg/L	ICPMS	NH ₄	0.007	mg N/L	Colorimetry
As	0.03	µg/L	ICPMS	NO ₂	0.002	mg N/L	Colorimetry
B	1	µg/L	ICPMS/ICPAES	NO ₃	0.02	mg N/L	Colorimetry/IC
Ba	0.01	µg/L	ICPMS/ICPAES	Na	0.02	mg/L	ICPAES
Be	0.008	µg/L	ICPMS	Nd	0.0007	µg/L	ICPMS
Bi	0.001	µg/L	ICPMS	Ni	0.4	µg/L	ICPMS
Br	1	µg/L	ICPMS	P	5	µg/L	ICPMS/ICPAES
CH ₄	0.1	µg C/L	GC	PO ₄	0.02	mg P/L	Colorimetry
Ca	0.01	mg/L	ICPAES	Pb	0.005	µg/L	ICPMS
Cd	0.002	µg/L	ICPMS	Pr	0.0002	µg/L	ICPMS
Ce	0.0003	µg/L	ICPMS	Rb	0.001	µg/L	ICPMS
Cl	0.2	mg/L	IC	Re	0.0003	µg/L	ICPMS
Co	0.005	µg/L	ICPMS	SO ₄	0.5	mg/L	IC
Cr	0.1	µg/L	ICPMS	Sb	0.001	µg/L	ICPMS
Cs	0.001	µg/L	ICPMS	Se	0.1	µg/L	ICPMS
Cu	0.03	µg/L	ICPMS	SiO ₂	0.02	mg/L	ICPAES
DOC	0.2	mg C/L	IR	Sm	0.0007	µg/L	ICPMS
Dy	0.0005	µg/L	ICPMS	Sr	0.03	µg/L	ICPMS/ICPAES
Er	0.0006	µg/L	ICPMS	Ta	0.001	µg/L	ICPMS
Eu	0.0003	µg/L	ICPMS	Tb	0.0002	µg/L	ICPMS
Fe	0.5	µg/L	ICPAES	Te	0.01	µg/L	ICPMS
Gd	0.0005	µg/L	ICPMS	Th	0.0002	µg/L	ICPMS
Hg	0.4	ng/L	CVAFS	Ti	0.1	µg/L	ICPMS/ICPAES
Ho	0.0001	µg/L	ICPMS	Tl	0.005	µg/L	ICPMS
K	0.003	mg/L	ICPMS/ICPAES	Tm	0.0002	µg/L	ICPMS
Kjeldahl N	0.1	mg N/L	Colorimetry	U	0.001	µg/L	ICPMS
La	0.0004	µg/L	ICPMS	V	0.1	µg/L	ICPMS/ICPAES
Li	0.01	µg/L	ICPMS	W	0.002	µg/L	ICPMS
Lu	0.0001	µg/L	ICPMS	Y	0.0003	µg/L	ICPMS
Mg	0.008	mg/L	ICPAES	Yb	0.0004	µg/L	ICPMS
Mn	0.06	µg/L	ICPMS/ICPAES	Zn	0.1	µg/L	ICPMS/ICPAES
Mo	0.04	µg/L	ICPMS	Zr	0.001	µg/L	ICPMS
N ₂ O	0.0003	mg N/L	GC				

Dissolved organic and inorganic carbon (DOC and DIC) were determined at the USGS NRP laboratories in Boulder, Colo. on an O.I. Analytical Model 700 carbon analyzer. First, DIC was determined by acidification of the sample with phosphoric acid and subsequent purgation of the resulting carbon dioxide gas by nitrogen. This was then measured by an infrared absorption spectrophotometric technique (Wershaw and others, 1983). Following removal of the inorganic carbon, the DOC was determined by oxidation with potassium persulfate and acidification to carbon dioxide.

Major Cations, Silica and Trace Elements

Elements present at concentration levels in the milligram per liter range, including Ca, K, Mg, Na, and SiO_2 and some selected elements, such as Fe and P, were determined at the USGS NRP laboratories in Boulder, Colo. Samples were analyzed in triplicate by inductively coupled plasma-atomic emission spectrometric (ICP-AES) techniques utilizing a Perkin Elmer Optima 3300DV, multichannel emission spectrometer. Use of the dual-view (radial and axial) optical configuration provided optimal sensitivity for various elements regardless of concentration. A general description of the analysis conditions and procedures are reported by Garbarino and Taylor (1979). Details of the operational conditions are described by Mitko and Bebek (1999, 2000). All analysis runs contained at least 20 percent quality-control standard reference samples to assess accuracy. Precision was assessed by the fact that all samples were analyzed in triplicate.

Trace elements (excluding Hg) were analyzed at the USGS NRP laboratories in Boulder, Colo. in triplicate on undiluted field preserved samples with a Perkin Elmer Elan Model 6000, inductively-coupled plasma-mass spectrometer (ICP-MS). Aerosols of HNO_3 -acidified aqueous samples were introduced into the spectrometer with a cone-spray pneumatic nebulizer. Multiple internal standards (indium, iridium and rhodium), covering the mass range of measured analytical isotopes were used to normalize the system for drift. Details of the specific analysis techniques, procedures, and instrumental settings are described elsewhere (Garbarino and Taylor, 1996; Taylor, 2001). All analysis runs contained at least 30 percent quality-control and standard reference samples to assess accuracy.

Trace concentration levels of total dissolved Hg (all forms) were measured in triplicate at the USGS NRP laboratories in Boulder, Colo. using an automated cold-vapor atomic fluorescence spectrometric method utilizing a PS Analytical Millennium System mercury analyzer. Details of the method have been described previously by Roth (1994) and Roth and others (2001). Elemental Hg vapor was produced by chemically reducing Hg in the sample with excess stannous chloride. The resulting vapor was transported to the detector with a stream of argon gas. All analysis runs contained at least 20 percent quality-control and standard reference samples to assess accuracy.

Dissolved Gases

Dissolved gases were measured at the USGS NRP laboratories in Boulder, Colo. Nitrous oxide was measured as described by Brooks and others (1992) with an HNU model GC 301 Gas Chromatograph equipped with an electron capture detector. Methane was measured with a Shimadzu model GC 17A Gas Chromatograph fitted with a flame ionization detector and a 2.44 m Porapak N (80/100 mesh) column using He carrier gas at 100 °C. Aqueous concentrations of nitrous oxide and methane were calculated using Bunsen solubility coefficients (Weiss and Price, 1980; Yamamoto and others, 1976).

Total Bacterial Cell Counts

Total bacterial cell counts were made at the USGS NRP laboratories in Reston, Vir. according to the method of Porter and Feig (1980) and are summarized here. A black Nucleopore 25-mm diameter, 0.2- μ m nominal pore-size polycarbonate membrane filter was placed on top of a damp 0.45- μ m Millipore support filter mounted on a glass filter frit with filter tower attached. One mL of the sample was added to the filter tower and DAPI (4',6-diamidino-2-phenylindole) was added to 0.01 μ g/mL and incubated for 5 minutes at room temperature. Gentle vacuum was applied to concentrate the sample onto the filter. The filter was washed twice with sterile salt solution and the filter was removed and placed damp onto a microscope slide to which one drop of low fluorescing immersion oil had been added. The filter was covered with a glass coverslip which also contained one drop of immersion oil, and at least 8 fields in the range of 40 cells/field were counted at 100X magnification (oil immersion) on a Zeiss epifluorescent microscope fitted with an ocular grid of known area. If the cell concentration was too high for optimal counting on the microscope a dilution of sample was performed, and counted as described.

Chlorophyll-a

Chlorophyll-*a* analyses were performed at the USGS NRP laboratories in Reston, Vir. Glass fiber filters, which were frozen immediately following sample processing, were thawed in low light and placed in a glass tube tissue grinder. All processing was performed at low light. Four mL of 90 percent acetone (HPLC grade) was added, and the filters were pulverized in the tissue grinder using a pestle and keeping the grinder on ice at all times. The filter/acetone mixture was poured off into a 15 mL centrifuge tube, and the grinder was rinsed with 2 mL 90 percent acetone, which also was added to the centrifuge tube. The sample was incubated in the dark at 4 °C for 16-20 hours. Sample tubes were brought to room temperature and centrifuged at 1,000g for 5 minutes to clarify the solution. The solution was poured into a glass tube and the fluorescence was measured using a Turner Model 10 fluorometer equipped with excitation filter 436FS10 and emission filter 680FS10, specific for chlorophyll-*a*. Complete details of the procedures are given in Arar and Collins (1997).

Suspended Sediment

Suspended sediment concentration determinations were made at the USGS NRP laboratories in Boulder, Colo. The filled sample bottle was first weighed. Then, a new pre-weighed 47-mm Whatman 41 paper filter was placed on a filter stand and the sample was filtered through it. The filter was oven-dried overnight at 95 °C, allowed to cool, and re-weighed. The empty sample bottle was reweighed as well. The suspended sediment concentration was calculated as the difference in weights of the filter divided by the difference in weights of the sample bottle (converted to units of milligrams per liter).

Quality Control/Quality Assurance

Accuracy and Precision

The quality of the data for trace metals, major cations and anions, and nutrients was assessed by a vigorous program involving a large number of quality-control (QC) standards, which were analyzed as unknowns during the analysis of all samples collected during the study. The frequency of analysis of these QC standards was variable depending upon the methodology used, but was always at least 20 percent of the total number of samples collected. Tables A1-A6 in Appendix A contain the results of these analyses, with each table representing a distinct sampling trip. The

columns of these tables are ordered alphabetically for each element or compound for which standards existed. The italicized rows in each table list the published “Most Probable Values” (MPVs) of each standard; the non-italicized rows list the median values for each analysis run, along with the number of times that standard was analyzed during the run. Elements or compounds for which no MPV existed are displayed in the tables with “na” (“not applicable”).

The large amount of data in these tables cannot be easily reduced, but figures 6-8 display representative portions of them, and indicate the agreement between the observed concentrations and their respective MPVs for a number of elements and compounds. These figures and the data in the tables suggest that the data collected during the study are appropriate for the objectives of the study.

Field Blanks

Field blank samples were collected during the June 1999, September 1999, and May 2000 sampling trips to evaluate whether field procedures could have introduced contamination into the samples. These data are presented in table A7 in Appendix A. During the June 1999 trip, three sets of field blanks were taken: (1) a source deionized (DI) water sample from a Millipore corporation MilliQ Plus deionized water system. This source water was used to rinse all equipment between samples; (2) a churn blank, in which source DI water was poured into the churn used for sample collection, churned and sampled; and (3) a filter blank, in which source DI water was passed through the 0.2- μ m Gelman filter and sampled. Blank samples collected during the September 1999 trip included these three samples, but also included a sample of water purchased from a local market which claimed to be deionized water and which was used to pre-rinse equipment before a final rinse was done with the MilliQ DI water. In addition, a “process” blank sample was taken, in which MilliQ DI water was poured into a churn, churned, collected into a holding bottle and subsequently filtered through a 0.2- μ m Gelman filter. The blank samples taken during the May 2000 trip additionally included a holding bottle blank, in which source DI was poured into one of the bottles used transfer samples from the churn to the Gelman filter.

Lagrangian and Synoptic Water-Quality Results

Tables A8-A42 in Appendix A contain the results of all analyses for the Lagrangian and synoptic samplings. The general structure of the tables is as follows. All results from the April 1999 reconnaissance are presented first (tables A8-A10). Next, all the results from the June 1999 sampling trip are presented (tables A11-A19), followed by September 1999 (tables A20-A24), May 2000 (tables A25-A29), September 2001 (tables A30-A34) and finally April 2002 (tables A35-A38). For each sampling trip, the tables are ordered so that Iroquois River data are presented first, followed by Sugar Creek data and finally by the Sugar Creek tributaries. In general, nutrient, DOC, dissolved gases and suspended sediment data are presented first, followed by major inorganic constituents, trace elements, field measurements, and finally, total bacterial cell counts and chlorophyll-*a* concentrations. The miscellaneous data collected from various ditches, tile drains, and other sites are presented in tables A39-A42. The order of presentation of data by sample site in these tables is similar to that described above.

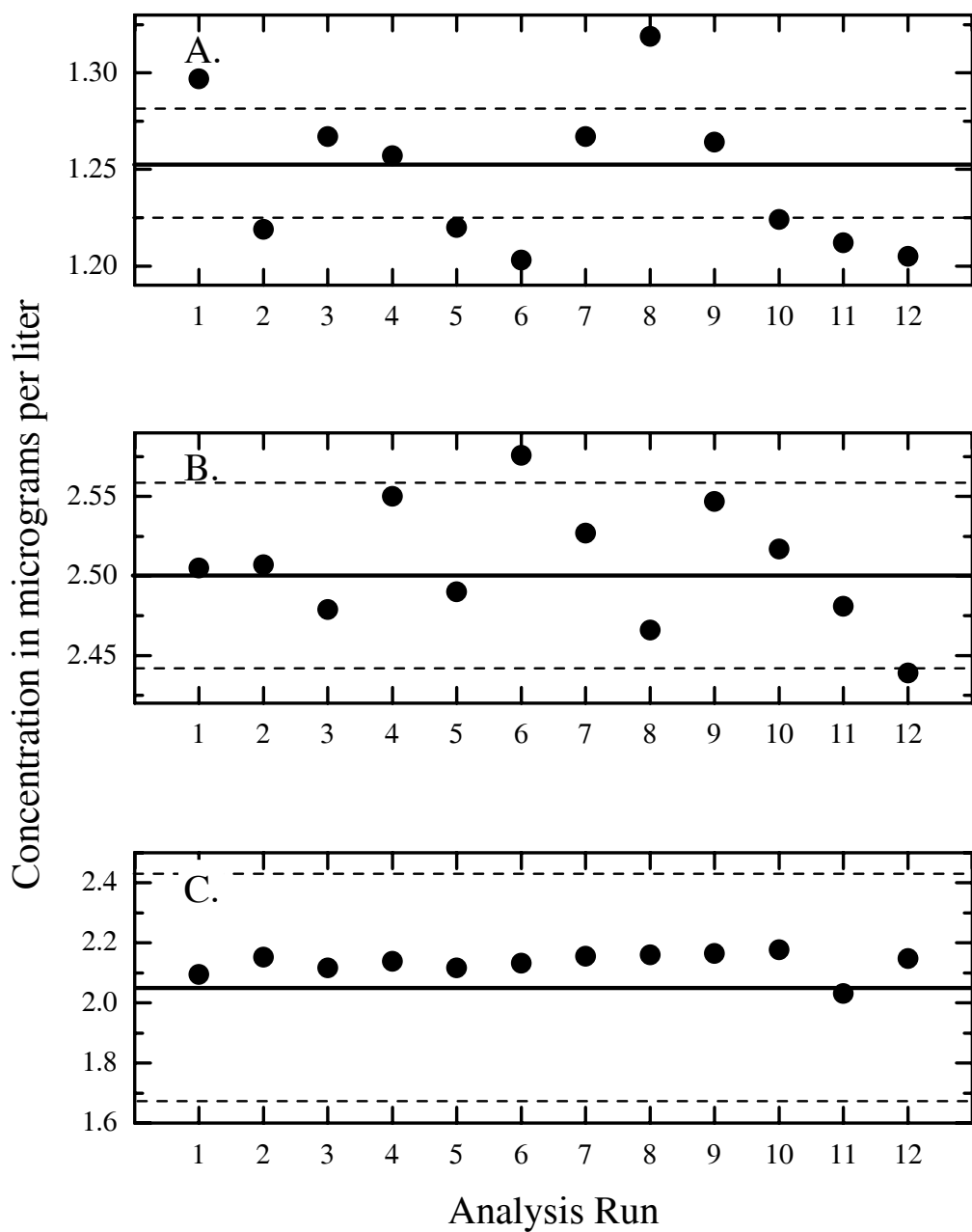


Figure 2. Quality-control charts of the NIST1643d standard (1:10 dilution) for each analysis run of the entire study. The solid points represent the average value of the standard for that analysis run. The solid line is the certified value, and the dashed lines represent the published uncertainty (National Institute of Standards and Technology, 1995). (A) Beryllium; (B) Cobalt; (C) Copper

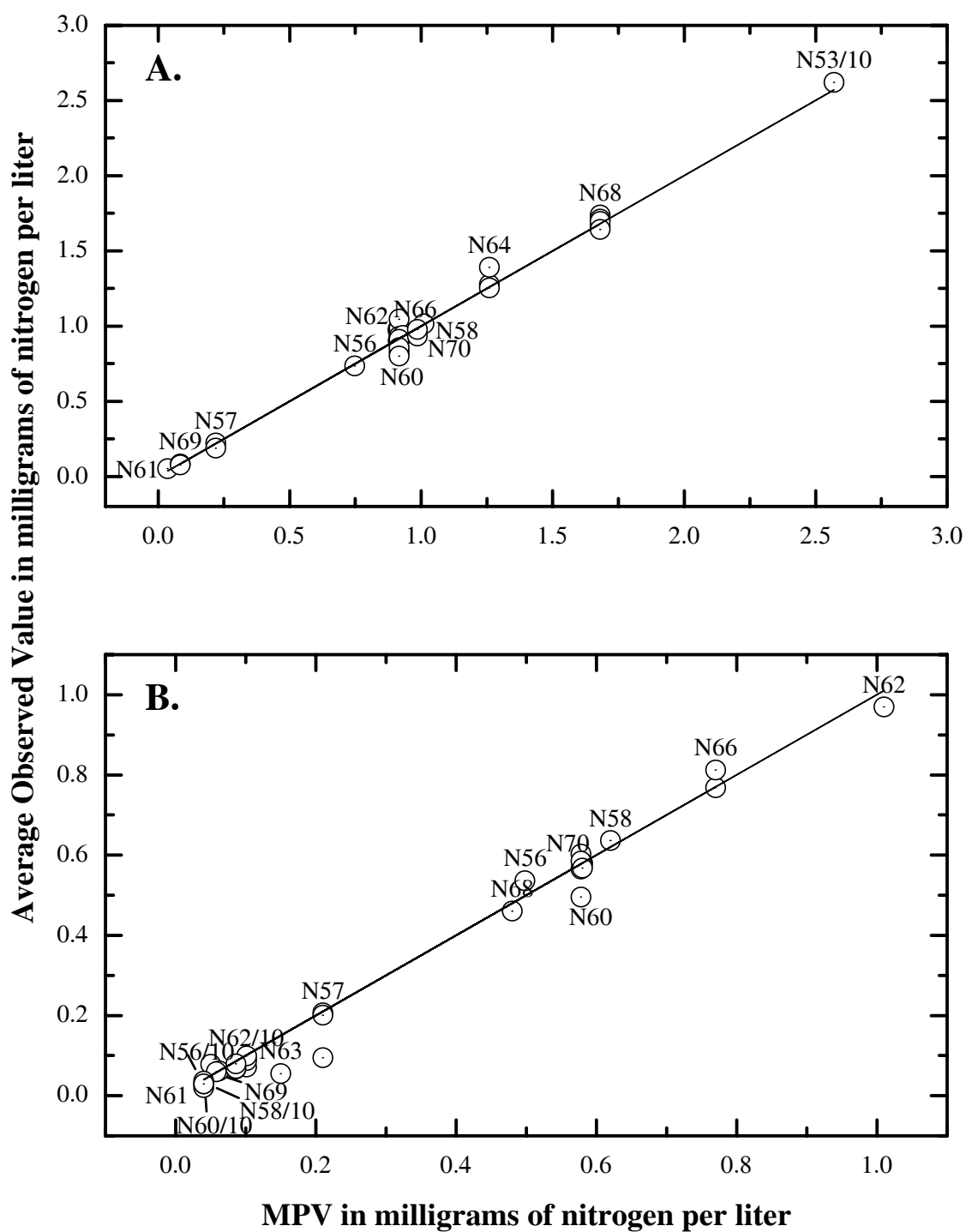


Figure 3. Most Probable Values (MPVs) and average observed concentrations for all nutrient standard reference materials used in this study. (A) Nitrate; (B) Ammonium

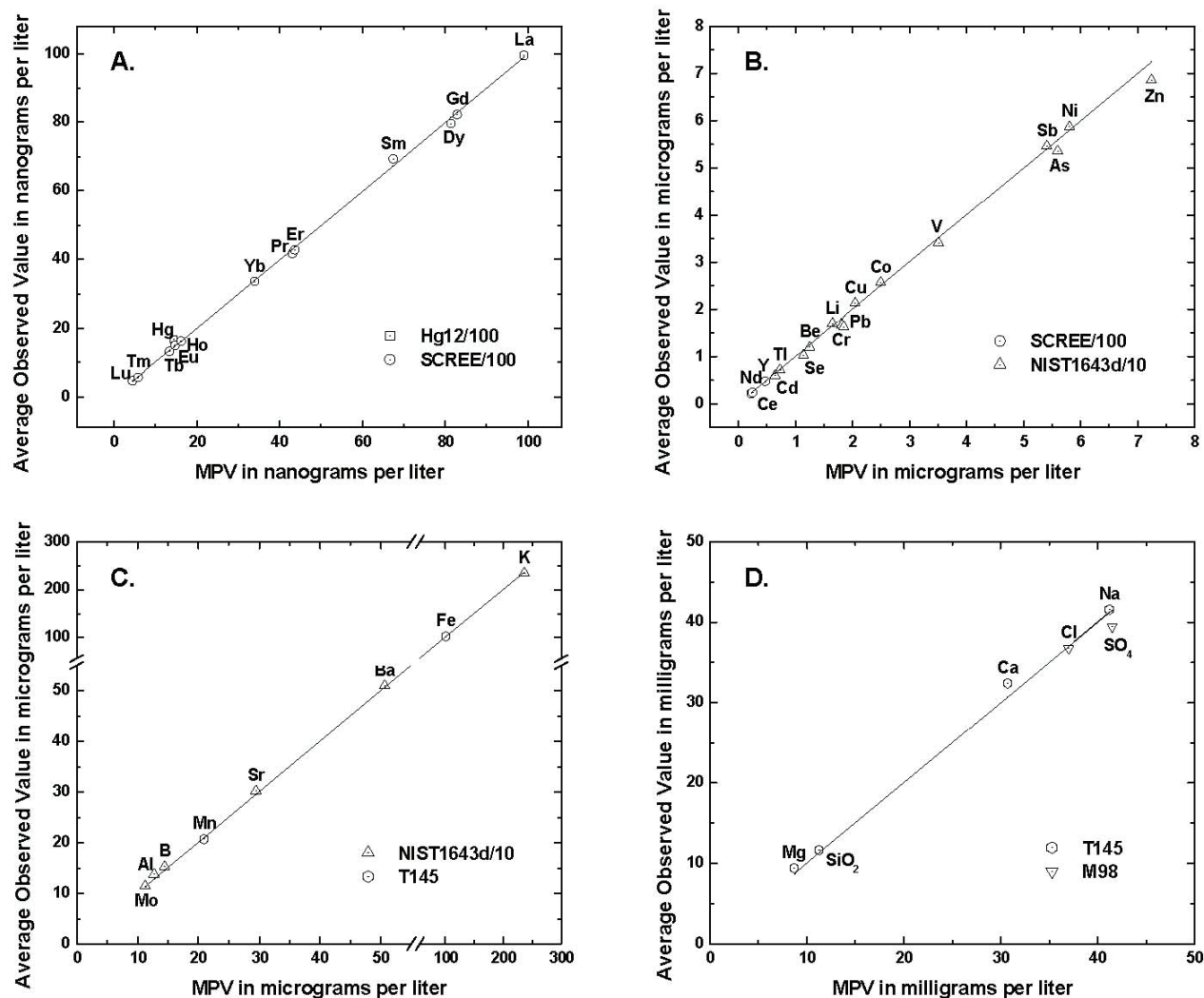


Figure 8. Most Probable Values (MPVs) and average observed concentrations for the first analysis run of the September 1999 data. The line is the line of perfect agreement between the MPV and the observed value. (A) Rare-earth elements and mercury (Hg); (B) Trace elements; (C) Lower concentration elements; (D) Major constituents.

The ranges of concentrations of selected major constituents can be seen in figure 9A. Chloride concentrations in the Iroquois River ranged from 23 to 55 mg/L, with highest values occurring in September 1999 and 2001. Concentrations of chloride in Sugar Creek tended to be lower, ranging from 16 to 26 mg/L. Bicarbonate concentrations for both drainages ranged from 35 to 63 mg C/L, and sulfate (not pictured in figure 9A) ranged from about 40 to 120 mg/L. Sodium concentrations in both drainages were highest during the September 1999 and 2001 sampling trips, and, relative to calcium (not pictured in figure 9A) and magnesium tended to have lower concentrations.

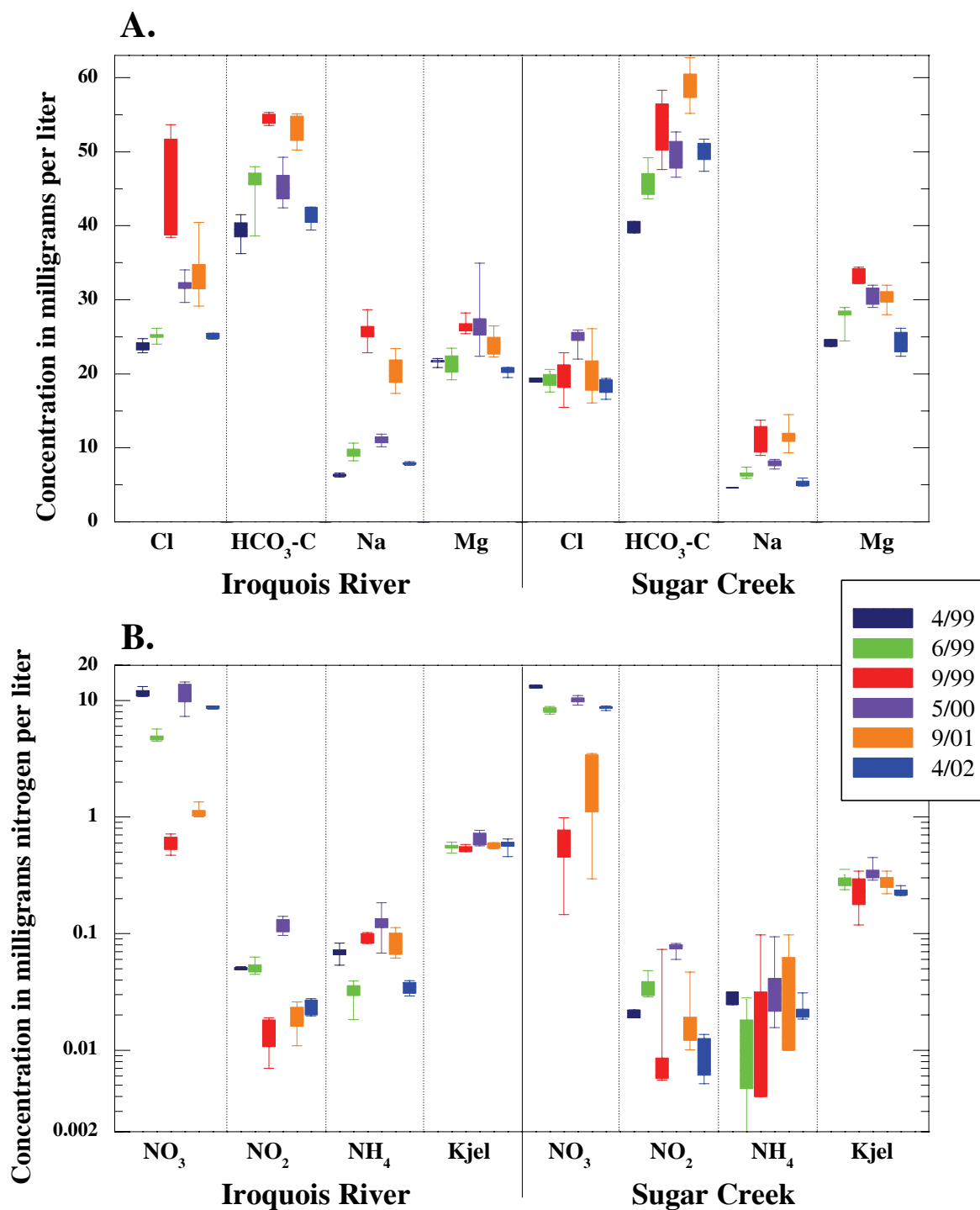


Figure 5. Box plots showing the concentration ranges of data for the Iroquois River and Sugar Creek for (A) Major cations and anions, expressed in milligrams per liter: chloride (Cl), bicarbonate (as carbon, HCO₃-C), sodium (Na) and magnesium (Mg); (B) Nutrients, expressed in milligrams nitrogen per liter: nitrate (NO₃), nitrite (NO₂), ammonium (NH₄), and Kjeldahl nitrogen (Kjel). Colors of the bars represent the sampling trip.

Selected nutrient concentrations (plotted on a logarithmic axis) are graphed in figure 9B. In contrast to chloride and sodium, lowest concentrations of nitrate occurred during September 1999 and 2001 on both drainages. During the other sampling trips, nitrate concentrations were far greater than all other nitrogen species, ranging from 4 to 13 mg N/L on both drainages. Kjeldahl nitrogen was very consistent, ranging from 0.2 to 0.6 mg N/L for all data, and showing little difference between sampling trips. Nitrite and ammonium concentrations were always less than 0.2 mg N/L for both drainages.

Trace element concentrations tended to be low. For example, arsenic concentrations ranged from 0.3 to 2.2 µg/L, copper concentrations from 0.3 to 1.8 µg/L and antimony concentrations from 0.06 to 0.17 µg/L.

Chlorophyll-*a* concentrations ranged from 4.0 to 13.6 µg/L in the Iroquois River and from 1.7 to 10.5 µg/L in Sugar Creek. Sugar Creek concentrations tended to be lower than the Iroquois River.

Summary

This report contains the results of analyses made for Lagrangian and synoptic sampling during six trips ranging from April 1999 to April 2002. The Lagrangian sampling occurred June 22-26, 1999, September 13-15, 1999, and May 8-11, 2000. The synoptic sampling occurred April 20, 1999, September 12-13, 2001, and April 3-4, 2002. For each trip, samples were taken on two study reaches, one spanning 38 kilometers along Sugar Creek in northwestern Indiana and northeastern Illinois, and the other spanning 21 kilometers on the Iroquois River in northwestern Indiana. Measured field parameters included streamflow, pH, specific conductance, water temperature and dissolved oxygen concentration. Methods and results are reported for major inorganic constituents, trace elements, nutrients, dissolved organic carbon, dissolved gases, suspended sediments, total bacterial cell counts, and chlorophyll-*a*. This report also contains the results of an extensive quality control/quality assurance program administered to assess the accuracy and precision of the sample data.

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Appendix A

Table A1. Quality control data for the April 1999 trip.

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Cd µg/L	Co µg/L	Cr µg/L	Cu µg/L	Hg ng/L	K mg/L	Li µg/L	Mn µg/L	Mo µg/L
	<i>Hg7/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	2.2	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99519SA	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	2.3	na	na	na	na
	<i>Hg12/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>14.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99519SA	Hg12/100 (12)	na	na	na	na	na	na	na	na	na	13.9	na	na	na	na
	<i>N57</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99425HY	N57 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>NIST1643d/10</i>	<i>12.76</i>	<i>5.602</i>	<i>14.48</i>	<i>50.65</i>	<i>1.253</i>	<i>0.647</i>	<i>2.5</i>	<i>1.853</i>	<i>2.05</i>	<i>na</i>	<i>0.236</i>	<i>1.65</i>	<i>3.766</i>	<i>11.29</i>
M99520HE	NIST1643d/10 (11)	12.4	5.4	16.6	50	1.30	0.61	2.51	1.88	2.10	na	0.20	1.80	3.59	11.4
	<i>T135</i>	<i>10.5</i>	<i>10</i>	<i>13.1</i>	<i>67.8</i>	<i>59</i>	<i>50.5</i>	<i>40</i>	<i>79</i>	<i>62</i>	<i>na</i>	<i>0.96</i>	<i>73.7</i>	<i>423</i>	<i>63</i>
M99520HE	T135 (12)	11.8	10.2	10.9	66	61	50.5	40	80	62	na	0.97	76	483	63
	<i>T145</i>	<i>67.6</i>	<i>9.88</i>	<i>45.6</i>	<i>37.1</i>	<i>9.04</i>	<i>9.33</i>	<i>10</i>	<i>15.3</i>	<i>11</i>	<i>na</i>	<i>2.13</i>	<i>27.3</i>	<i>20.9</i>	<i>9.23</i>
M99520HE	T145 (12)	63	9.8	45	37	9.3	9.3	10.0	14.5	10.6	na	2.15	27.6	20.1	8.5
	<i>T147</i>	<i>14</i>	<i>2.39</i>	<i>50</i>	<i>73</i>	<i>16</i>	<i>15.9</i>	<i>na</i>	<i>12.8</i>	<i>11.4</i>	<i>na</i>	<i>3.52</i>	<i>18</i>	<i>17.2</i>	<i>11.8</i>
M99520HE	T147 (12)	12.9	2.42	50	74	16.0	15.5	na	12.2	11.1	na	3.52	17.5	16.8	12.5
	<i>T149</i>	<i>35.5</i>	<i>0.98</i>	<i>128</i>	<i>42.5</i>	<i>na</i>	<i>2.18</i>	<i>na</i>	<i>48.8</i>	<i>5</i>	<i>na</i>	<i>2</i>	<i>44.2</i>	<i>11.8</i>	<i>1.25</i>
M99520HE	T149 (22)	36	0.90	128	43	na	2.20	na	49	7.2	na	1.97	44	11.1	1.03

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A1. Quality control data for the April 1999 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, na, not applicable]

Analysis Run	Standard ¹	NH ₄ mg N/L	NO ₃ +NO ₂ mg N/L	Na mg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Sb µg/L	Se µg/L	Sr µg/L	Tl µg/L	U µg/L	V µg/L	Zn µg/L
	<i>Hg7/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99519SA	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg12/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99519SA	Hg12/100 (12)	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N57</i>	<i>0.21</i>	<i>0.22</i>	<i>na</i>	<i>na</i>	<i>0.20</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99425HY	N57 (2)	0.09	0.22	na	na	0.21	na	na	na	na	na	na	na	na
	<i>NIST1643d/10</i>	<i>na</i>	<i>na</i>	<i>2.207</i>	<i>5.81</i>	<i>na</i>	<i>1.815</i>	<i>5.41</i>	<i>1.143</i>	<i>29.48</i>	<i>0.728</i>	<i>na</i>	<i>3.51</i>	<i>7.248</i>
M99520HE	NIST1643d/10 (11)	na	na	2.31	5.9	na	1.90	5.5	1.00	29.5	0.75	na	3.56	7.1
	<i>T135</i>	<i>na</i>	<i>na</i>	<i>30.8</i>	<i>65.6</i>	<i>na</i>	<i>103</i>	<i>76.3</i>	<i>10</i>	<i>46</i>	<i>na</i>	<i>na</i>	<i>52.8</i>	<i>48.2</i>
M99520HE	T135 (12)	na	na	31.7	66	na	103	76	10.0	46	na	na	55	48
	<i>T145</i>	<i>na</i>	<i>na</i>	<i>41.2</i>	<i>11</i>	<i>na</i>	<i>12.7</i>	<i>8.8</i>	<i>10.1</i>	<i>203</i>	<i>15.3</i>	<i>1.1</i>	<i>11.7</i>	<i>10</i>
M99520HE	T145 (12)	na	na	41	11.0	na	13.0	8.7	10.0	201	15.1	1.16	11.3	9.4
	<i>T147</i>	<i>na</i>	<i>na</i>	<i>52.6</i>	<i>13.6</i>	<i>na</i>	<i>13.8</i>	<i>10.5</i>	<i>10.1</i>	<i>313</i>	<i>20</i>	<i>3.21</i>	<i>15.2</i>	<i>14</i>
M99520HE	T147 (12)	na	na	52	13.4	na	14.0	10.5	10.4	311	19.0	3.22	15.3	13.4
	<i>T149</i>	<i>na</i>	<i>na</i>	<i>42.8</i>	<i>31.2</i>	<i>na</i>	<i>8.84</i>	<i>21.1</i>	<i>2.1</i>	<i>331</i>	<i>31.4</i>	<i>2.71</i>	<i>31</i>	<i>5.8</i>
M99520HE	T149 (22)	na	na	43	31.4	na	9.0	20.3	1.85	331	31.3	2.63	30.9	4.8

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip.

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Ce µg/L	Cl mg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L	Hg ng/L
	<i>Hg7/100</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.2
H99910hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.4
H99913hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.8
H99916hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.7
H99917hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.5
	<i>Hg12/100</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	14.4
H99910hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	16.2
H99913hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	17.6
H99916hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	16.7
H99917hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	16.5
	<i>Hg14/100</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	7.0
H99910hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	6.6
H99913hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	7.3
H99916hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	6.9
H99917hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	6.8
	<i>Hg15/100</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	4.1
H99910hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.9
H99913hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	4.2
H99916hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	4.3
H99917hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	4.2
	<i>M98</i>	na	na	na	na	na	na	na	na	32.5	na	na	na	na	na	na	na	na	na
I99630HY	M98 (3)	na	na	na	na	na	na	na	na	34.8	na	na	na	na	na	na	na	na	na
I99701HY	M98 (3)	na	na	na	na	na	na	na	na	37.7	na	na	na	na	na	na	na	na	na
I99706HY	M98 (3)	na	na	na	na	na	na	na	na	37.5	na	na	na	na	na	na	na	na	na
	<i>M110</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I99630HY	M110 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I99701HY	M110 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I99706HY	M110 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N53/10</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I99706HY	N53/10 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N60</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99701H1	N60 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99701H2	N60 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N61</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99630H1	N61 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99630H2	N61 (13)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Ce µg/L	Cl mg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L	Hg ng/L
	<i>N62</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99701H1	N62 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99701H2	N62 (15)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N62/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99630H1	N62/10 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99630H2	N62/10 (13)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>NIST1643d/10</i>	<i>12.76</i>	<i>5.602</i>	<i>14.48</i>	<i>50.65</i>	<i>1.253</i>	<i>na</i>	<i>0.647</i>	<i>na</i>	<i>na</i>	<i>2.5</i>	<i>1.853</i>	<i>2.05</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
M99902HY	NIST1643d/10 (10)	11.9	5.4	15.7	51	1.22	na	0.65	na	na	2.51	3.5	2.15	na	na	na	na	na	na
M99907HY	NIST1643d/10 (6)	12.4	5.4	15.8	51	1.27	na	0.65	na	na	2.48	4.1	2.12	na	na	na	na	na	na
M99908HY	NIST1643d/10 (6)	12.4	5.4	16.6	49	1.26	na	0.68	na	na	2.55	4.9	2.14	na	na	na	na	na	na
M99909HY	NIST1643d/10 (8)	12.1	5.4	16.7	51	1.22	na	0.68	na	na	2.49	5.2	2.12	na	na	na	na	na	na
	<i>PPREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>1.63</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.22</i>	<i>0.12</i>	<i>0.060</i>	<i>na</i>	<i>0.24</i>	<i>na</i>
M99902HY	PPREE/100 (6)	na	na	na	na	na	na	na	1.62	na	na	na	na	0.22	0.12	0.060	na	0.24	na
M99907HY	PPREE/100 (5)	na	na	na	na	na	na	na	1.63	na	na	na	na	0.22	0.12	0.060	na	0.24	na
M99908HY	PPREE/100 (5)	na	na	na	na	na	na	na	1.66	na	na	na	na	0.22	0.12	0.060	na	0.24	na
M99909HY	PPREE/100 (4)	na	na	na	na	na	na	na	1.63	na	na	na	na	0.22	0.12	0.060	na	0.24	na
	<i>SCREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.246</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.081</i>	<i>0.044</i>	<i>0.015</i>	<i>na</i>	<i>0.083</i>	<i>na</i>
M99902HY	SCREE/100 (5)	na	na	na	na	na	na	na	0.24	na	na	na	na	0.081	0.047	0.014	na	0.085	na
M99907HY	SCREE/100 (5)	na	na	na	na	na	na	na	0.26	na	na	na	na	0.084	0.047	0.015	na	0.086	na
M99908HY	SCREE/100 (5)	na	na	na	na	na	na	na	0.26	na	na	na	na	0.083	0.048	0.015	na	0.088	na
M99909HY	SCREE/100 (4)	na	na	na	na	na	na	na	0.25	na	na	na	na	0.085	0.044	0.015	na	0.086	na
	<i>T105</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>73</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>24</i>	<i>na</i>	<i>na</i>
A00217HY	T105 (7)	na	na	na	na	na	75	na	na	na	na	na	na	na	na	na	22	na	na
A00225HY	T105 (7)	na	na	na	na	na	73	na	na	na	na	na	na	na	na	na	20	na	na
A00229HY	T105 (7)	na	na	na	na	na	74	na	na	na	na	na	na	na	na	na	20	na	na
	<i>T131</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>30.6</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>90.7</i>	<i>na</i>	<i>na</i>
A00217HY	T131 (6)	na	na	na	na	na	29	na	na	na	na	na	na	na	na	na	91	na	na
A00225HY	T131 (6)	na	na	na	na	na	30	na	na	na	na	na	na	na	na	na	89	na	na
A00229HY	T131 (6)	na	na	na	na	na	30	na	na	na	na	na	na	na	na	na	87	na	na
	<i>T135</i>	<i>10.5</i>	<i>10</i>	<i>13.1</i>	<i>67.8</i>	<i>59</i>	<i>10.4</i>	<i>50.5</i>	<i>na</i>	<i>na</i>	<i>40</i>	<i>79</i>	<i>62</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>228</i>	<i>na</i>	<i>na</i>
M99902HY	T135 (11)	7.9	10.1	10.5	63	56	na	51	na	na	39	76	62	na	na	na	na	na	na
M99907HY	T135 (6)	8.3	10.2	11.3	65	58	na	51	na	na	40	78	62	na	na	na	na	na	na
M99908HY	T135 (6)	8.4	10.1	11.8	65	59	na	51	na	na	40	79	62	na	na	na	na	na	na
M99909HY	T135 (6)	8.2	10.1	11.2	66	60	na	50	na	na	39	79	62	na	na	na	na	na	na
A00217HY	T135 (7)	na	na	na	na	na	9.9	na	na	na	na	na	na	na	na	na	221	na	na
A00225HY	T135 (7)	na	na	na	na	na	10.4	na	na	na	na	na	na	na	na	na	229	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Ce µg/L	Cl mg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L	Hg ng/L
A00229HY T135 (7) <i>T139</i>		na <i>na</i>	na <i>na</i>	na <i>na</i>	na <i>na</i>	na <i>na</i>	10.4 <i>50.3</i>	na <i>na</i>	na <i>na</i>	na <i>na</i>	na <i>na</i>	na <i>na</i>	na <i>na</i>	na <i>na</i>	na <i>na</i>	na <i>na</i>	na <i>na</i>	227 <i>7.5</i>	na <i>na</i>
A00217HY T139 (16)		na	na	na	na	na	49	na	na	na	na	na	na	na	na	na	na	8.1	na
A00225HY T139 (16)		na	na	na	na	na	51	na	na	na	na	na	na	na	na	na	na	8.0	na
A00229HY T139 (16)		na	na	na	na	na	51	na	na	na	na	na	na	na	na	na	na	8.0	na
<i>T145</i>		67.6	9.88	45.6	37.1	9.04	30.7	9.33	na	na	10	15.3	11	na	na	na	101	na	na
M99902HY T145 (10)		60	9.8	46	37	8.9	na	9.2	na	na	10.0	13.8	11.0	na	na	na	na	na	na
M99907HY T145 (6)		65	9.8	47	37	9.1	na	9.4	na	na	10.0	14.1	10.5	na	na	na	na	na	na
M99908HY T145 (6)		65	9.9	48	37	9.2	na	9.3	na	na	10.0	14.3	10.5	na	na	na	na	na	na
M99909HY T145 (8)		63	9.9	48	38	9.1	na	9.3	na	na	10.0	14.4	10.8	na	na	na	na	na	na
A00217HY T145 (6)		na	na	na	na	na	30	na	na	na	na	na	na	na	na	na	107	na	na
A00225HY T145 (6)		na	na	na	na	na	30	na	na	na	na	na	na	na	na	na	102	na	na
A00229HY T145 (6)		na	na	na	na	na	31	na	na	na	na	na	na	na	na	na	103	na	na
<i>T147</i>		14	2.39	50	73	16	na	15.9	na	na	na	12.8	11.4	na	na	na	na	na	na
M99902HY T147 (11)		12.4	2.46	52	73	15.8	na	15.7	na	na	na	12.0	11.7	na	na	na	na	na	na
M99907HY T147 (6)		12.9	2.45	52	71	16.2	na	15.7	na	na	na	12.2	10.8	na	na	na	na	na	na
M99908HY T147 (6)		13.8	2.46	54	73	16.0	na	15.9	na	na	na	12.4	11.4	na	na	na	na	na	na
M99909HY T147 (7)		13.1	2.42	51	74	16.1	na	15.9	na	na	na	12.4	11.6	na	na	na	na	na	na
<i>T149</i>		35.5	0.98	128	42.5	na	42.3	2.18	na	na	na	48.8	5	na	na	na	70	na	na
M99902HY T149 (14)		35	0.88	127	42	na	na	2.2	na	na	na	48	7.6	na	na	na	na	na	na
M99907HY T149 (10)		35	0.91	128	42	na	na	2.2	na	na	na	49	7.0	na	na	na	na	na	na
M99908HY T149 (10)		35	0.91	129	42	na	na	2.2	na	na	na	49	7.2	na	na	na	na	na	na
M99909HY T149 (13)		35	0.82	127	43	na	na	2.2	na	na	na	49	7.5	na	na	na	na	na	na
A00217HY T149 (7)		na	na	na	na	na	42	na	na	na	na	na	na	na	na	na	75	na	na
A00225HY T149 (7)		na	na	na	na	na	42	na	na	na	na	na	na	na	na	na	73	na	na
A00229HY T149 (7)		na	na	na	na	na	42	na	na	na	na	na	na	na	na	na	73	na	na
<i>T155</i>		na	na	na	na	na	42	na	na	na	na	na	na	na	na	na	88	na	na
A00217HY T155 (7)		na	na	na	na	na	43	na	na	na	na	na	na	na	na	na	96	na	na
A00225HY T155 (7)		na	na	na	na	na	42	na	na	na	na	na	na	na	na	na	92	na	na
A00229HY T155 (7)		na	na	na	na	na	41	na	na	na	na	na	na	na	na	na	91	na	na

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Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis Run	Standard ¹	Ho µg/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ +NO ₂ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L	SO ₄ mg/L
	<i>Hg7/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99910hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99913hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99916hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99917hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg12/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99910hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99913hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99916hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99917hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg14/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99910hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99913hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99916hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99917hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg15/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99910hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99913hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99916hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99917hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M98</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>41.5</i>
I99630HY	M98 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	37.2
I99701HY	M98 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	39.3
I99706HY	M98 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	38.7
	<i>M110</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>64</i>
I99630HY	M110 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	62.8
I99701HY	M110 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	63.0
I99706HY	M110 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	63.6
	<i>N53/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I99706HY	N53/10 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N60</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99701H1	N60 (1)	na	na	na	na	na	na	na	na	0.58	0.91	na	na	na	na	na	na	na
N99701H2	N60 (5)	na	na	na	na	na	na	na	na	0.50	0.97	na	na	na	na	na	na	na
	<i>N61</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	0.56	0.98	na	na	na	na	na	na	na
N99630H1	N61 (10)	na	na	na	na	na	na	na	na	0.040	na	na	na	na	0.038	na	na	na
N99630H2	N61 (13)	na	na	na	na	na	na	na	na	0.019	na	na	na	na	0.050	na	na	na
										0.030	na	na	na	na	0.025	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis Run	Standard ¹	Ho µg/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ +NO ₂ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L	SO ₄ mg/L
	<i>N62</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.92</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99701H1	N62 (6)	na	na	na	na	na	na	na	na	na	0.99	na	na	na	na	na	na	na
N99701H2	N62 (15)	na	na	na	na	na	na	na	na	na	1.05	na	na	na	na	na	na	na
	<i>N62/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.101</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.08</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99630H1	N62/10 (10)	na	na	na	na	na	na	na	na	0.071	na	na	na	na	0.084	na	na	na
N99630H2	N62/10 (13)	na	na	na	na	na	na	na	na	0.087	na	na	na	na	0.059	na	na	na
	<i>NIST1643d/10</i>	<i>na</i>	<i>0.236</i>	<i>na</i>	<i>1.65</i>	<i>na</i>	<i>na</i>	<i>3.766</i>	<i>11.29</i>	<i>na</i>	<i>na</i>	<i>2.207</i>	<i>na</i>	<i>5.81</i>	<i>na</i>	<i>1.815</i>	<i>na</i>	<i>na</i>
M99902HY	NIST1643d/10 (10)	na	0.25	na	1.75	na	na	3.77	11.5	na	na	2.31	na	5.8	na	1.87	na	na
M99907HY	NIST1643d/10 (6)	na	0.25	na	1.75	na	na	3.94	11.5	na	na	2.34	na	5.9	na	1.95	na	na
M99908HY	NIST1643d/10 (6)	na	0.23	na	1.77	na	na	3.94	11.4	na	na	2.34	na	6.1	na	1.89	na	na
M99909HY	NIST1643d/10 (8)	na	0.27	na	1.74	na	na	3.94	11.5	na	na	2.40	na	5.9	na	1.87	na	na
	<i>PPREE/100</i>	<i>0.044</i>	<i>na</i>	<i>0.804</i>	<i>na</i>	<i>0.011</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.934</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.212</i>	<i>na</i>
M99902HY	PPREE/100 (6)	0.044	na	0.80	na	0.011	na	na	na	na	na	na	0.93	na	na	na	0.21	na
M99907HY	PPREE/100 (5)	0.044	na	0.77	na	0.011	na	na	na	na	na	na	0.93	na	na	na	0.21	na
M99908HY	PPREE/100 (5)	0.044	na	0.76	na	0.011	na	na	na	na	na	na	0.93	na	na	na	0.21	na
M99909HY	PPREE/100 (4)	0.044	na	0.78	na	0.011	na	na	na	na	na	na	0.93	na	na	na	0.21	na
	<i>SCREE/100</i>	<i>0.016</i>	<i>na</i>	<i>0.099</i>	<i>na</i>	<i>0.0045</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.222</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.043</i>	<i>na</i>
M99902HY	SCREE/100 (5)	0.017	na	0.099	na	0.0049	na	na	na	na	na	na	0.22	na	na	na	0.042	na
M99907HY	SCREE/100 (5)	0.018	na	0.101	na	0.0047	na	na	na	na	na	na	0.24	na	na	na	0.045	na
M99908HY	SCREE/100 (5)	0.016	na	0.096	na	0.0044	na	na	na	na	na	na	0.23	na	na	na	0.044	na
M99909HY	SCREE/100 (4)	0.016	na	0.101	na	0.0045	na	na	na	na	na	na	0.23	na	na	na	0.044	na
	<i>T105</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>66.8</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00217HY	T105 (7)	na	na	na	na	na	67	na	na	na	na	na	na	na	na	na	na	na
A00225HY	T105 (7)	na	na	na	na	na	70	na	na	na	na	na	na	na	na	na	na	na
A00229HY	T105 (7)	na	na	na	na	na	69	na	na	na	na	na	na	na	na	na	na	na
	<i>T131</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>8</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00217HY	T131 (6)	na	na	na	na	na	7.4	na	na	na	na	na	na	na	na	na	na	na
A00225HY	T131 (6)	na	na	na	na	na	8.0	na	na	na	na	na	na	na	na	na	na	na
A00229HY	T131 (6)	na	na	na	na	na	7.8	na	na	na	na	na	na	na	na	na	na	na
	<i>T135</i>	<i>na</i>	<i>0.96</i>	<i>na</i>	<i>73.7</i>	<i>na</i>	<i>2</i>	<i>423</i>	<i>63</i>	<i>na</i>	<i>na</i>	<i>30.8</i>	<i>na</i>	<i>65.6</i>	<i>na</i>	<i>103</i>	<i>na</i>	<i>na</i>
M99902HY	T135 (11)	na	0.96	na	73	na	na	388	63	na	na	31	na	63	na	98	na	na
M99907HY	T135 (6)	na	0.94	na	75	na	na	393	63	na	na	31	na	65	na	103	na	na
M99908HY	T135 (6)	na	0.92	na	74	na	na	398	63	na	na	31	na	66	na	103	na	na
M99909HY	T135 (6)	na	0.94	na	74	na	na	406	63	na	na	31	na	64	na	101	na	na
A00217HY	T135 (7)	na	na	na	na	na	1.8	na	na	na	na	na	na	na	na	na	na	na
A00225HY	T135 (7)	na	na	na	na	na	2.0	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis Run	Standard ¹	Ho µg/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ +NO ₂ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L	SO ₄ mg/L
A00229HY	T135 (7)	na	na	na	na	na	2.0	na	na	na	na	na	na	na	na	na	na	na
	<i>T139</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00217HY	T139 (16)	na	na	na	na	na	9.3	na	na	na	na	na	na	na	na	na	na	na
A00225HY	T139 (16)	na	na	na	na	na	10.4	na	na	na	na	na	na	na	na	na	na	na
A00229HY	T139 (16)	na	na	na	na	na	10.2	na	na	na	na	na	na	na	na	na	na	na
	<i>T145</i>	<i>na</i>	<i>2.13</i>	<i>na</i>	<i>27.3</i>	<i>na</i>	<i>8.68</i>	<i>20.9</i>	<i>9.23</i>	<i>na</i>	<i>na</i>	<i>41.2</i>	<i>na</i>	<i>11</i>	<i>na</i>	<i>12.7</i>	<i>na</i>	<i>na</i>
M99902HY	T145 (10)	na	2.21	na	27	na	na	20.5	8.8	na	na	41	na	10.8	na	12.5	na	na
M99907HY	T145 (6)	na	2.13	na	28	na	na	21.0	8.7	na	na	42	na	11.0	na	13.1	na	na
M99908HY	T145 (6)	na	2.10	na	27	na	na	20.9	8.6	na	na	42	na	11.6	na	13.1	na	na
M99909HY	T145 (8)	na	2.16	na	28	na	na	21.5	8.7	na	na	42	na	11.6	na	12.4	na	na
A00217HY	T145 (6)	na	na	na	na	na	8.1	na	na	na	na	na	na	na	na	na	na	na
A00225HY	T145 (6)	na	na	na	na	na	8.8	na	na	na	na	na	na	na	na	na	na	na
A00229HY	T145 (6)	na	na	na	na	na	8.6	na	na	na	na	na	na	na	na	na	na	na
	<i>T147</i>	<i>na</i>	<i>3.52</i>	<i>na</i>	<i>18</i>	<i>na</i>	<i>na</i>	<i>17.2</i>	<i>11.8</i>	<i>na</i>	<i>na</i>	<i>52.6</i>	<i>na</i>	<i>13.6</i>	<i>na</i>	<i>13.8</i>	<i>na</i>	<i>na</i>
M99902HY	T147 (11)	na	3.7	na	18.1	na	na	17.3	12.2	na	na	54	na	13.6	na	13.7	na	na
M99907HY	T147 (6)	na	3.6	na	18.2	na	na	17.5	12.1	na	na	53	na	13.6	na	13.9	na	na
M99908HY	T147 (6)	na	3.6	na	18.4	na	na	17.6	12.2	na	na	53	na	13.8	na	14.4	na	na
M99909HY	T147 (7)	na	3.5	na	18.2	na	na	17.9	12.0	na	na	53	na	13.5	na	13.7	na	na
	<i>T149</i>	<i>na</i>	<i>2</i>	<i>na</i>	<i>44.2</i>	<i>na</i>	<i>13.1</i>	<i>11.8</i>	<i>1.25</i>	<i>na</i>	<i>na</i>	<i>42.8</i>	<i>na</i>	<i>31.2</i>	<i>na</i>	<i>8.84</i>	<i>na</i>	<i>na</i>
M99902HY	T149 (14)	na	2.0	na	44	na	na	11.6	1.10	na	na	43	na	31	na	8.9	na	na
M99907HY	T149 (10)	na	1.9	na	44	na	na	11.7	1.08	na	na	42	na	31	na	9.1	na	na
M99908HY	T149 (10)	na	1.9	na	43	na	na	11.8	1.06	na	na	43	na	32	na	9.2	na	na
M99909HY	T149 (13)	na	2.0	na	44	na	na	11.9	1.07	na	na	43	na	31	na	8.8	na	na
A00217HY	T149 (7)	na	na	na	na	na	12.3	na	na	na	na	na	na	na	na	na	na	na
A00225HY	T149 (7)	na	na	na	na	na	13.3	na	na	na	na	na	na	na	na	na	na	na
A00229HY	T149 (7)	na	na	na	na	na	13.1	na	na	na	na	na	na	na	na	na	na	na
	<i>T155</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>11.1</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00217HY	T155 (7)	na	na	na	na	na	10.8	na	na	na	na	na	na	na	na	na	na	na
A00225HY	T155 (7)	na	na	na	na	na	11.4	na	na	na	na	na	na	na	na	na	na	na
A00229HY	T155 (7)	na	na	na	na	na	10.9	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis Run	Standard ¹	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L
	<i>Hg7/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99910hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99913hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99916hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99917hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg12/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99910hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99913hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99916hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99917hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg14/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99910hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99913hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99916hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99917hy	Hg14/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg15/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99910hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99913hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99916hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
H99917hy	Hg15/100 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M98</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I99630HY	M98 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na
I99701HY	M98 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na
I99706HY	M98 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M110</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I99630HY	M110 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na
I99701HY	M110 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na
I99706HY	M110 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N53/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I99706HY	N53/10 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N60</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99701H1	N60 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na
N99701H2	N60 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N61</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99630H1	N61 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na
N99630H2	N61 (13)	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis Run	Standard ¹	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L
	<i>N62</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99701H1	N62 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na
N99701H2	N62 (15)	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N62/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99630H1	N62/10 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na
N99630H2	N62/10 (13)	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>NIST1643d/10</i>	<i>5.41</i>	<i>1.143</i>	<i>na</i>	<i>na</i>	<i>29.48</i>	<i>na</i>	<i>0.728</i>	<i>na</i>	<i>na</i>	<i>3.51</i>	<i>na</i>	<i>na</i>	<i>7.248</i>
M99902HY	NIST1643d/10 (10)	5.6	1.07	na	na	29.5	na	0.74	na	na	3.4	na	na	7.3
M99907HY	NIST1643d/10 (6)	5.6	1.05	na	na	30.0	na	0.73	na	na	3.7	na	na	7.4
M99908HY	NIST1643d/10 (6)	5.6	1.04	na	na	30.3	na	0.68	na	na	3.7	na	na	7.6
M99909HY	NIST1643d/10 (8)	5.6	1.09	na	na	30.0	na	0.72	na	na	3.6	na	na	7.8
	<i>PPREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.204</i>	<i>na</i>	<i>0.037</i>	<i>na</i>	<i>0.015</i>	<i>na</i>	<i>na</i>	<i>1.348</i>	<i>0.082</i>	<i>na</i>
M99902HY	PPREE/100 (6)	na	na	na	0.20	na	0.036	na	0.0149	na	na	1.35	0.083	na
M99907HY	PPREE/100 (5)	na	na	na	0.20	na	0.037	na	0.0146	na	na	1.33	0.081	na
M99908HY	PPREE/100 (5)	na	na	na	0.20	na	0.037	na	0.0149	na	na	1.38	0.082	na
M99909HY	PPREE/100 (4)	na	na	na	0.20	na	0.037	na	0.0148	na	na	1.36	0.081	na
	<i>SCREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.067</i>	<i>na</i>	<i>0.013</i>	<i>na</i>	<i>0.006</i>	<i>na</i>	<i>na</i>	<i>0.472</i>	<i>0.034</i>	<i>na</i>
M99902HY	SCREE/100 (5)	na	na	na	0.066	na	0.0135	na	0.0061	na	na	0.48	0.034	na
M99907HY	SCREE/100 (5)	na	na	na	0.072	na	0.0143	na	0.0059	na	na	0.47	0.036	na
M99908HY	SCREE/100 (5)	na	na	na	0.071	na	0.0137	na	0.0061	na	na	0.48	0.034	na
M99909HY	SCREE/100 (4)	na	na	na	0.070	na	0.0137	na	0.0062	na	na	0.47	0.035	na
	<i>T105</i>	<i>na</i>	<i>na</i>	<i>25.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00217HY	T105 (7)	na	na	25	na	na	na	na	na	na	na	na	na	na
A00225HY	T105 (7)	na	na	26	na	na	na	na	na	na	na	na	na	na
A00229HY	T105 (7)	na	na	25	na	na	na	na	na	na	na	na	na	na
	<i>T131</i>	<i>na</i>	<i>na</i>	<i>5.8</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00217HY	T131 (6)	na	na	5.4	na	na	na	na	na	na	na	na	na	na
A00225HY	T131 (6)	na	na	5.8	na	na	na	na	na	na	na	na	na	na
A00229HY	T131 (6)	na	na	5.7	na	na	na	na	na	na	na	na	na	na
	<i>T135</i>	<i>76.3</i>	<i>10</i>	<i>4.28</i>	<i>na</i>	<i>46</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>52.8</i>	<i>na</i>	<i>na</i>	<i>48.2</i>
M99902HY	T135 (11)	77	9.8	na	na	46	na	na	na	na	52	na	na	48
M99907HY	T135 (6)	78	9.5	na	na	46	na	na	na	na	54	na	na	48
M99908HY	T135 (6)	77	10.0	na	na	47	na	na	na	na	55	na	na	48
M99909HY	T135 (6)	78	9.3	na	na	47	na	na	na	na	54	na	na	48
A00217HY	T135 (7)	na	na	3.8	na	na	na	na	na	na	na	na	na	na
A00225HY	T135 (7)	na	na	4.2	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A2. Quality control data for the June 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; na, not applicable]

Analysis Run	Standard ¹	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L
A00229HY	T135 (7)	na	na	4.0	na	na	na	na	na	na	na	na	na	na
	<i>T139</i>	<i>na</i>	<i>na</i>	<i>9.31</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00217HY	T139 (16)	na	na	8.7	na	na	na	na	na	na	na	na	na	na
A00225HY	T139 (16)	na	na	9.4	na	na	na	na	na	na	na	na	na	na
A00229HY	T139 (16)	na	na	9.3	na	na	na	na	na	na	na	na	na	na
	<i>T145</i>	<i>8.8</i>	<i>10.1</i>	<i>11.3</i>	<i>na</i>	<i>203</i>	<i>na</i>	<i>15.3</i>	<i>na</i>	<i>1.1</i>	<i>11.7</i>	<i>na</i>	<i>na</i>	<i>10</i>
M99902HY	T145 (10)	8.8	9.9	na	na	200	na	15.1	na	1.2	10.6	na	na	9.4
M99907HY	T145 (6)	9.0	9.4	na	na	201	na	14.9	na	1.2	11.2	na	na	9.4
M99908HY	T145 (6)	8.8	9.7	na	na	201	na	14.9	na	1.2	11.3	na	na	9.2
M99909HY	T145 (8)	8.8	9.3	na	na	201	na	14.7	na	1.1	11.2	na	na	9.1
A00217HY	T145 (6)	na	na	10.5	na	na	na	na	na	na	na	na	na	na
A00225HY	T145 (6)	na	na	11.1	na	na	na	na	na	na	na	na	na	na
A00229HY	T145 (6)	na	na	11.0	na	na	na	na	na	na	na	na	na	na
	<i>T147</i>	<i>10.5</i>	<i>10.1</i>	<i>na</i>	<i>na</i>	<i>313</i>	<i>na</i>	<i>20</i>	<i>na</i>	<i>3.21</i>	<i>15.2</i>	<i>na</i>	<i>na</i>	<i>14</i>
M99902HY	T147 (11)	10.5	10.6	na	na	317	na	19.1	na	3.3	15.0	na	na	13.8
M99907HY	T147 (6)	10.5	10.1	na	na	311	na	18.5	na	3.2	15.5	na	na	13.6
M99908HY	T147 (6)	10.5	10.6	na	na	319	na	19.1	na	3.3	15.9	na	na	14.0
M99909HY	T147 (7)	10.6	10.3	na	na	320	na	19.0	na	3.2	15.6	na	na	14.0
	<i>T149</i>	<i>21.1</i>	<i>2.1</i>	<i>11.8</i>	<i>na</i>	<i>331</i>	<i>na</i>	<i>31.4</i>	<i>na</i>	<i>2.71</i>	<i>31</i>	<i>na</i>	<i>na</i>	<i>5.8</i>
M99902HY	T149 (14)	21	1.7	na	na	330	na	31	na	2.6	31	na	na	4.5
M99907HY	T149 (10)	21	1.9	na	na	331	na	31	na	2.6	31	na	na	4.4
M99908HY	T149 (10)	21	1.8	na	na	333	na	31	na	2.6	31	na	na	4.4
M99909HY	T149 (13)	21	1.4	na	na	331	na	32	na	2.6	31	na	na	4.3
A00217HY	T149 (7)	na	na	11.5	na	na	na	na	na	na	na	na	na	na
A00225HY	T149 (7)	na	na	11.4	na	na	na	na	na	na	na	na	na	na
A00229HY	T149 (7)	na	na	11.5	na	na	na	na	na	na	na	na	na	na
	<i>T155</i>	<i>na</i>	<i>na</i>	<i>10.2</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00217HY	T155 (7)	na	na	9.9	na	na	na	na	na	na	na	na	na	na
A00225HY	T155 (7)	na	na	9.9	na	na	na	na	na	na	na	na	na	na
A00229HY	T155 (7)	na	na	9.6	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip.

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Ce µg/L	Cl mg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
	<i>GWM2</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00329HY	GWM2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00330HY	GWM2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00331HY	GWM2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00406HY	GWM2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg7/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99930hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o01hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o05hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg12/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99930hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o01hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o05hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg14/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99930hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o01hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o05hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg15/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99930hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o01hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o05hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M94</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00302HY	M94 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00303HY	M94 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M98</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>37</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I99N08HY	M98 (6)	na	na	na	na	na	na	na	na	36.8	na	na	na	na	na	na	na	na
I99N09HY	M98 (7)	na	na	na	na	na	na	na	na	37.4	na	na	na	na	na	na	na	na
	<i>M110</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I99N08HY	M110 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I99N09HY	M110 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M136</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00329HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00330HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00331HY	M136 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Ce µg/L	Cl mg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
B00406HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M140</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00215HY	M140 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M142</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00215HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N56</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99924HY	N56 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N56/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99921HY	N56/10 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N57</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99921HY	N57 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99924HY	N57 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N58</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99924HY	N58 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N58/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99921HY	N58/10 (29)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N60</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99924HY	N60 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N60/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99921HY	N60/10 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N61</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99921HY	N61 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99924HY	N61 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N62</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99924HY	N62 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N62/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99921HY	N62/10 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>NIST1643d/10</i>	<i>12.76</i>	<i>5.602</i>	<i>14.48</i>	<i>50.65</i>	<i>1.253</i>	<i>na</i>	<i>0.647</i>	<i>na</i>	<i>na</i>	<i>2.5</i>	<i>1.853</i>	<i>2.05</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
M00426HY	NIST1643d/10 (10)	13.8	5.4	15.3	51	1.20	na	0.60	na	na	2.6	1.63	2.1	na	na	na	na	na
	<i>PPREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>1.63</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.22</i>	<i>0.12</i>	<i>0.06</i>	<i>na</i>	<i>0.24</i>
M00426HY	PPREE/100 (6)	na	na	na	na	na	na	na	1.61	na	na	na	na	0.22	0.120	0.061	na	0.24
	<i>SCREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.246</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.0814</i>	<i>0.0437</i>	<i>0.0148</i>	<i>na</i>	<i>0.0829</i>
M00426HY	SCREE/100 (5)	na	na	na	na	na	na	na	0.24	na	na	na	na	0.080	0.043	0.015	na	0.082

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Ce µg/L	Cl mg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
<i>T105</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	73	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	24	<i>na</i>
A00309HY T105 (7)		na	na	na	na	na	72	na	na	na	na	na	na	na	na	na	na	19
A00315HY T105 (7)		na	na	na	na	na	72	na	na	na	na	na	na	na	na	na	na	19
A00404Hy T105 (5)		na	na	na	na	na	72	na	na	na	na	na	na	na	na	na	na	22
A00421HY T105 (8)		na	na	na	na	na	73	na	na	na	na	na	na	na	na	na	na	20
<i>T131</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	30.6	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	90.7	<i>na</i>
A00309HY T131 (6)		na	na	na	na	na	30	na	na	na	na	na	na	na	na	na	na	81
A00315HY T131 (6)		na	na	na	na	na	31	na	na	na	na	na	na	na	na	na	na	83
A00404Hy T131 (5)		na	na	na	na	na	31	na	na	na	na	na	na	na	na	na	na	88
A00421HY T131 (7)		na	na	na	na	na	30	na	na	na	na	na	na	na	na	na	na	87
<i>T135</i>		10.5	10	13.1	67.8	59	10.4	50.5	<i>na</i>	<i>na</i>	40	79	62	<i>na</i>	<i>na</i>	<i>na</i>	228	<i>na</i>
M00426HY T135 (11)		10.4	10.2	10.6	67	59	na	50	na	na	40	76	63	na	na	na	na	na
A00309HY T135 (7)		na	na	na	na	na	11.0	na	na	na	na	na	na	na	na	na	na	225
A00315HY T135 (7)		na	na	na	na	na	11.0	na	na	na	na	na	na	na	na	na	na	227
A00404Hy T135 (6)		na	na	na	na	na	11.0	na	na	na	na	na	na	na	na	na	na	230
A00421HY T135 (8)		na	na	na	na	na	10.7	na	na	na	na	na	na	na	na	na	na	227
<i>T139</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	50.3	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	7.5	<i>na</i>
A00309HY T139 (16)		na	na	na	na	na	49	na	na	na	na	na	na	na	na	na	na	7.5
A00315HY T139 (16)		na	na	na	na	na	52	na	na	na	na	na	na	na	na	na	na	7.3
A00404Hy T139 (13)		na	na	na	na	na	51	na	na	na	na	na	na	na	na	na	na	7.7
A00421HY T139 (19)		na	na	na	na	na	51	na	na	na	na	na	na	na	na	na	na	7.3
<i>T145</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	30.7	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	101	<i>na</i>
A00309HY T145 (6)		na	na	na	na	na	32	na	na	na	na	na	na	na	na	na	na	103
A00315HY T145 (6)		na	na	na	na	na	32	na	na	na	na	na	na	na	na	na	na	100
<i>T147</i>		14	2.39	50	73	16	41.1	15.9	<i>na</i>	<i>na</i>	<i>na</i>	12.8	11.4	<i>na</i>	<i>na</i>	<i>na</i>	8.4	<i>na</i>
M00426HY T147 (11)		13.9	2.4	51	72	16.2	na	15.7	na	na	na	12.0	11.6	na	na	na	na	na
A00404Hy T147 (5)		na	na	na	na	na	42	na	na	na	na	na	na	na	na	na	na	7.6
A00421HY T147 (7)		na	na	na	na	na	41	na	na	na	na	na	na	na	na	na	na	6.7
<i>T149</i>		35.5	0.98	128	42.5	<i>na</i>	42.3	2.18	<i>na</i>	<i>na</i>	<i>na</i>	48.8	5	<i>na</i>	<i>na</i>	<i>na</i>	70	<i>na</i>
M00426HY T149 (19)		na	0.97	128	45	na	na	2.1	na	na	na	49	7.3	na	na	na	na	na
A00309HY T149 (7)		na	na	na	na	na	43	na	na	na	na	na	na	na	na	na	na	72
A00315HY T149 (7)		na	na	na	na	na	44	na	na	na	na	na	na	na	na	na	na	72
A00404Hy T149 (5)		na	na	na	na	na	42	na	na	na	na	na	na	na	na	na	na	72
A00421HY T149 (8)		na	na	na	na	na	42	na	na	na	na	na	na	na	na	na	na	73

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Ce µg/L	Cl mg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
<i>T155</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	42	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	88	<i>na</i>
A00309HY	T155 (7)	na	na	na	na	na	45	na	na	na	na	na	na	na	na	na	na	93
A00315HY	T155 (7)	na	na	na	na	na	44	na	na	na	na	na	na	na	na	na	na	90
A00404Hy	T155 (6)	na	na	na	na	na	43	na	na	na	na	na	na	na	na	na	na	91
A00421HY	T155 (8)	na	na	na	na	na	41	na	na	na	na	na	na	na	na	na	na	87
<i>T157</i>		55.5	25.4	70.4	118	13	<i>na</i>	5.8	<i>na</i>	<i>na</i>	4.03	31.3	24.8	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
M00426HY	T157 (10)	58	26	71	118	12.9	na	5.7	na	na	4	32	25	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Ho µg/L	Hg ng/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ +NO ₂ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
	<i>GW</i> <i>M2</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00329HY	GWM2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00330HY	GWM2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00331HY	GWM2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00406HY	GWM2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg7/100</i>	<i>na</i>	<i>2.2</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99930hy	Hg7/100 (6)	na	3.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o01hy	Hg7/100 (6)	na	3.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o05hy	Hg7/100 (6)	na	2.7	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg12/100</i>	<i>na</i>	<i>14.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99930hy	Hg12/100 (6)	na	16.8	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o01hy	Hg12/100 (6)	na	17.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o05hy	Hg12/100 (6)	na	16.7	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg14/100</i>	<i>na</i>	<i>7.0</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99930hy	Hg14/100 (6)	na	7.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o01hy	Hg14/100 (6)	na	7.7	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o05hy	Hg14/100 (6)	na	7.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg15/100</i>	<i>na</i>	<i>4.1</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99930hy	Hg15/100 (6)	na	3.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o01hy	Hg15/100 (6)	na	4.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o05hy	Hg15/100 (6)	na	4.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M94</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00302HY	M94 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00303HY	M94 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M98</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I99N08HY	M98 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I99N09HY	M98 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M110</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I99N08HY	M110 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I99N09HY	M110 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M136</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00329HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00330HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00331HY	M136 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

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Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Ho µg/L	Hg ng/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ +NO ₂ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
B00406HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M140	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00215HY	M140 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	M142	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00215HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	N56	na	na	na	na	na	na	na	na	na	0.50	0.75	na	na	na	na	na	na
N99924HY	N56 (5)	na	na	na	na	na	na	na	na	na	0.54	0.74	na	na	na	na	na	na
	N56/10	na	na	na	na	na	na	na	na	na	0.050	na	na	na	na	0.066	na	na
N99921HY	N56/10 (6)	na	na	na	na	na	na	na	na	na	0.079	na	na	na	na	0.070	na	na
	N57	na	na	na	na	na	na	na	na	na	0.21	0.22	na	na	na	0.20	na	na
N99921HY	N57 (6)	na	na	na	na	na	na	na	na	na	0.21	na	na	na	na	0.19	na	na
N99924HY	N57 (5)	na	na	na	na	na	na	na	na	na	0.20	0.19	na	na	na	na	na	na
	N58	na	na	na	na	na	na	na	na	na	0.62	1.01	na	na	na	na	na	na
N99924HY	N58 (9)	na	na	na	na	na	na	na	na	na	0.64	1.02	na	na	na	na	na	na
	N58/10	na	na	na	na	na	na	na	na	na	0.062	na	na	na	na	0.069	na	na
N99921HY	N58/10 (29)	na	na	na	na	na	na	na	na	na	0.062	na	na	na	na	0.073	na	na
	N60	na	na	na	na	na	na	na	na	na	0.58	0.91	na	na	na	na	na	na
N99924HY	N60 (5)	na	na	na	na	na	na	na	na	na	0.60	0.90	na	na	na	na	na	na
	N60/10	na	na	na	na	na	na	na	na	na	0.058	na	na	na	na	0.068	na	na
N99921HY	N60/10 (9)	na	na	na	na	na	na	na	na	na	0.060	na	na	na	na	0.068	na	na
	N61	na	na	na	na	na	na	na	na	na	0.040	0.036	na	na	na	0.038	na	na
N99921HY	N61 (6)	na	na	na	na	na	na	na	na	na	0.037	na	na	na	na	0.041	na	na
N99924HY	N61 (5)	na	na	na	na	na	na	na	na	na	0.030	0.053	na	na	na	na	na	na
	N62	na	na	na	na	na	na	na	na	na	1.01	0.92	na	na	na	na	na	na
N99924HY	N62 (9)	na	na	na	na	na	na	na	na	na	0.97	0.93	na	na	na	na	na	na
	N62/10	na	na	na	na	na	na	na	na	na	0.101	na	na	na	na	0.080	na	na
N99921HY	N62/10 (9)	na	na	na	na	na	na	na	na	na	0.099	na	na	na	na	0.059	na	na
	NIST1643d/10	na	na	0.236	na	1.65	na	na	na	11.29	na	na	na	na	5.81	na	1.815	na
M00426HY	NIST1643d/10 (10)	na	na	0.23	na	1.70	na	na	na	11.5	na	na	na	na	5.9	na	1.67	na
	PPREE/100	0.0443	na	na	0.804	na	0.0111	na	na	na	na	na	na	0.934	na	na	na	0.212
M00426HY	PPREE/100 (6)	0.045	na	na	0.79	na	0.0111	na	na	na	na	na	na	0.92	na	na	na	0.21
	SCREE/100	0.0162	na	na	0.099	na	0.00453	na	na	na	na	na	na	0.222	na	na	na	0.0431
M00426HY	SCREE/100 (5)	0.016	na	na	0.099	na	0.0047	na	na	na	na	na	na	0.22	na	na	na	0.042

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Ho µg/L	Hg ng/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ +NO ₂ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
<i>T105</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	66.8	73	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00309HY T105 (7)		na	na	na	na	na	na	72	72	na	na	na	na	na	na	na	na	na
A00315HY T105 (7)		na	na	na	na	na	na	67	69	na	na	na	na	na	na	na	na	na
A00404Hy T105 (5)		na	na	na	na	na	na	67	74	na	na	na	na	na	na	na	na	na
A00421HY T105 (8)		na	na	na	na	na	na	67	76	na	na	na	na	na	na	na	na	na
<i>T131</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	8	37.8	<i>na</i>	<i>na</i>	<i>na</i>	21.4	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00309HY T131 (6)		na	na	na	na	na	na	7.5	34	na	na	na	19	na	na	na	na	na
A00315HY T131 (6)		na	na	na	na	na	na	7.8	34	na	na	na	20	na	na	na	na	na
A00404Hy T131 (5)		na	na	na	na	na	na	7.7	37	na	na	na	18	na	na	na	na	na
A00421HY T131 (7)		na	na	na	na	na	na	7.6	37	na	na	na	17	na	na	na	na	na
<i>T135</i>		<i>na</i>	<i>na</i>	0.96	<i>na</i>	73.7	<i>na</i>	2	423	63	<i>na</i>	<i>na</i>	30.8	<i>na</i>	65.6	<i>na</i>	103	<i>na</i>
M00426HY T135 (11)		na	na	0.91	na	72	na	na	na	63	na	na	na	na	65	na	103	na
A00309HY T135 (7)		na	na	na	na	na	na	2.2	419	na	na	na	31	na	na	na	na	na
A00315HY T135 (7)		na	na	na	na	na	na	2.1	423	na	na	na	31	na	na	na	na	na
A00404Hy T135 (6)		na	na	na	na	na	na	2.1	423	na	na	na	28	na	na	na	na	na
A00421HY T135 (8)		na	na	na	na	na	na	2.0	422	na	na	na	26	na	na	na	na	na
<i>T139</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	10	2.4	<i>na</i>	<i>na</i>	<i>na</i>	90.9	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00309HY T139 (16)		na	na	na	na	na	na	10.3	2.5	na	na	na	95	na	na	na	na	na
A00315HY T139 (16)		na	na	na	na	na	na	10.2	2.1	na	na	na	93	na	na	na	na	na
A00404Hy T139 (13)		na	na	na	na	na	na	9.8	2.4	na	na	na	83	na	na	na	na	na
A00421HY T139 (19)		na	na	na	na	na	na	9.9	2.5	na	na	na	81	na	na	na	na	na
<i>T145</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	8.68	20.9	<i>na</i>	<i>na</i>	<i>na</i>	41.2	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00309HY T145 (6)		na	na	na	na	na	na	9.4	21	na	na	na	42	na	na	na	na	na
A00315HY T145 (6)		na	na	na	na	na	na	9.0	20	na	na	na	41	na	na	na	na	na
<i>T147</i>		<i>na</i>	<i>na</i>	3.52	<i>na</i>	18	<i>na</i>	8.2	17.2	11.8	<i>na</i>	<i>na</i>	52.6	<i>na</i>	13.6	<i>na</i>	13.8	<i>na</i>
M00426HY T147 (11)		na	na	3.5	na	17.8	na	na	na	12.2	na	na	na	na	13.8	na	12.3	na
A00404Hy T147 (5)		na	na	na	na	na	na	8.2	17.3	na	na	na	48	na	na	na	na	na
A00421HY T147 (7)		na	na	na	na	na	na	7.9	17.0	na	na	na	44	na	na	na	na	na
<i>T149</i>		<i>na</i>	<i>na</i>	2	<i>na</i>	44.2	<i>na</i>	13.1	11.8	1.25	<i>na</i>	<i>na</i>	42.8	<i>na</i>	31.2	<i>na</i>	8.84	<i>na</i>
M00426HY T149 (19)		na	na	2.1	na	44	na	na	na	1.32	na	na	na	na	31	na	8.1	na
A00309HY T149 (7)		na	na	na	na	na	na	13.6	11.1	na	na	na	42	na	na	na	na	na
A00315HY T149 (7)		na	na	na	na	na	na	13.4	10.9	na	na	na	42	na	na	na	na	na
A00404Hy T149 (5)		na	na	na	na	na	na	12.9	11.8	na	na	na	37	na	na	na	na	na
A00421HY T149 (8)		na	na	na	na	na	na	12.6	11.7	na	na	na	36	na	na	na	na	na

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Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Ho µg/L	Hg ng/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ +NO ₂ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
<i>T155</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>11.1</i>	<i>50.9</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>28.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00309HY	T155 (7)	na	na	na	na	na	na	11.7	50	na	na	na	29	na	na	na	na	na
A00315HY	T155 (7)	na	na	na	na	na	na	11.6	49	na	na	na	28	na	na	na	na	na
A00404Hy	T155 (6)	na	na	na	na	na	na	10.9	51	na	na	na	25	na	na	na	na	na
A00421HY	T155 (8)	na	na	na	na	na	na	10.5	51	na	na	na	23	na	na	na	na	na
<i>T157</i>		<i>na</i>	<i>na</i>	<i>2.51</i>	<i>na</i>	<i>32.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>13</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>30</i>	<i>na</i>	<i>6.9</i>	<i>na</i>
M00426HY	T157 (10)	na	na	2.5	na	33	na	na	na	12.0	na	na	na	na	32	na	5.7	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

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Analysis Run	Standard ¹	SO ₄ mg/L	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L	Alkalinity meq/L
	<i>GW</i> M2	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	5.053
B00329HY	GW M2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	5.100
B00330HY	GW M2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	5.102
B00331HY	GW M2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	5.096
B00406HY	GW M2 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	5.107
	<i>Hg</i> 7/100	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99930hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o01hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o05hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg</i> 12/100	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99930hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o01hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o05hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg</i> 14/100	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99930hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o01hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o05hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg</i> 15/100	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H99930hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o01hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H99o05hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M</i> 94	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	4.900
B00302HY	M94 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	4.884
B00303HY	M94 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	4.875
	<i>M</i> 98	41.5	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I99N08HY	M98 (6)	39.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I99N09HY	M98 (7)	39.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M</i> 110	64	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I99N08HY	M110 (6)	64.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I99N09HY	M110 (7)	63.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M</i> 136	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	3.040
B00329HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.027
B00330HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.033
B00331HY	M136 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.033

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

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Analysis Run	Standard ¹	SO ₄ mg/L	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L	Alkalinity meq/L
B00406HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.036
	<i>M140</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>1.200</i>
B00215HY	M140 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.076
	<i>M142</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>3.600</i>
B00215HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.523
	<i>N56</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99924HY	N56 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N56/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99921HY	N56/10 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N57</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99921HY	N57 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99924HY	N57 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N58</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99924HY	N58 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N58/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99921HY	N58/10 (29)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N60</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99924HY	N60 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N60/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99921HY	N60/10 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N61</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99921HY	N61 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N99924HY	N61 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N62</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99924HY	N62 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N62/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N99921HY	N62/10 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>NIST1643d/10</i>	<i>na</i>	<i>5.41</i>	<i>1.143</i>	<i>na</i>	<i>na</i>	<i>29.48</i>	<i>na</i>	<i>0.728</i>	<i>na</i>	<i>na</i>	<i>3.51</i>	<i>na</i>	<i>na</i>	<i>7.248</i>	<i>na</i>
M00426HY	NIST1643d/10 (10) ¹	na	5.5	1.03	na	na	30	na	0.72	na	na	na	na	na	na	na
	<i>PPREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.204</i>	<i>na</i>	<i>0.0367</i>	<i>na</i>	<i>0.0148</i>	<i>na</i>	<i>na</i>	<i>1.348</i>	<i>0.0818</i>	<i>na</i>	<i>na</i>
M00426HY	PPREE/100 (6)	na	na	na	na	0.20	na	0.037	na	0.0148	na	na	1.34	0.081	na	na
	<i>SCREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.0674</i>	<i>na</i>	<i>0.0134</i>	<i>na</i>	<i>0.00585</i>	<i>na</i>	<i>na</i>	<i>0.472</i>	<i>0.034</i>	<i>na</i>	<i>na</i>
M00426HY	SCREE/100 (5)	na	na	na	na	0.069	na	0.013	na	0.0055	na	na	0.48	0.034	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	SO ₄ mg/L	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L	Alkalinity meq/L
<i>T105</i>		<i>na</i>	<i>na</i>	<i>na</i>	25.4	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00309HY T105 (7)		na	na	na	25	na	na	na	na	na	na	na	na	na	na	na
A00315HY T105 (7)		na	na	na	25	na	na	na	na	na	na	na	na	na	na	na
A00404Hy T105 (5)		na	na	na	25	na	na	na	na	na	na	na	na	na	na	na
A00421HY T105 (8)		na	na	na	26	na	na	na	na	na	na	na	na	na	na	na
<i>T131</i>		<i>na</i>	<i>na</i>	<i>na</i>	5.8	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00309HY T131 (6)		na	na	na	5.5	na	na	na	na	na	na	na	na	na	na	na
A00315HY T131 (6)		na	na	na	5.7	na	na	na	na	na	na	na	na	na	na	na
A00404Hy T131 (5)		na	na	na	6.0	na	na	na	na	na	na	na	na	na	na	na
A00421HY T131 (7)		na	na	na	5.8	na	na	na	na	na	na	na	na	na	na	na
<i>T135</i>		<i>na</i>	76.3	10	4.28	<i>na</i>	46	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	52.8	<i>na</i>	<i>na</i>	48.2	<i>na</i>
M00426HY T135 (11)		na	77	10.0	na	na	47	na	na	na	na	50	na	na	48	na
A00309HY T135 (7)		na	na	na	4.4	na	na	na	na	na	na	na	na	na	na	na
A00315HY T135 (7)		na	na	na	4.4	na	na	na	na	na	na	na	na	na	na	na
A00404Hy T135 (6)		na	na	na	4.5	na	na	na	na	na	na	na	na	na	na	na
A00421HY T135 (8)		na	na	na	4.6	na	na	na	na	na	na	na	na	na	na	na
<i>T139</i>		<i>na</i>	<i>na</i>	<i>na</i>	9.31	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00309HY T139 (16)		na	na	na	9.4	na	na	na	na	na	na	na	na	na	na	na
A00315HY T139 (16)		na	na	na	9.6	na	na	na	na	na	na	na	na	na	na	na
A00404Hy T139 (13)		na	na	na	9.1	na	na	na	na	na	na	na	na	na	na	na
A00421HY T139 (19)		na	na	na	9.4	na	na	na	na	na	na	na	na	na	na	na
<i>T145</i>		<i>na</i>	<i>na</i>	<i>na</i>	11.3	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00309HY T145 (6)		na	na	na	11.6	na	na	na	na	na	na	na	na	na	na	na
A00315HY T145 (6)		na	na	na	11.5	na	na	na	na	na	na	na	na	na	na	na
<i>T147</i>		<i>na</i>	10.5	10.1	24	<i>na</i>	313	<i>na</i>	20	<i>na</i>	3.21	15.2	<i>na</i>	<i>na</i>	14	<i>na</i>
M00426HY T147 (11)		na	10.3	10.2	na	na	323	na	19.3	na	3.3	14.4	na	na	12.8	na
A00404Hy T147 (5)		na	na	na	25	na	na	na	na	na	na	na	na	na	na	na
A00421HY T147 (7)		na	na	na	25	na	na	na	na	na	na	na	na	na	na	na
<i>T149</i>		<i>na</i>	21.1	2.1	11.8	<i>na</i>	331	<i>na</i>	31.4	<i>na</i>	2.71	31	<i>na</i>	<i>na</i>	5.8	<i>na</i>
M00426HY T149 (19)		na	19.8	1.85	na	na	332	na	32	na	2.7	31	na	na	5.0	na
A00309HY T149 (7)		na	na	na	11.6	na	na	na	na	na	na	na	na	na	na	na
A00315HY T149 (7)		na	na	na	12.1	na	na	na	na	na	na	na	na	na	na	na
A00404Hy T149 (5)		na	na	na	11.3	na	na	na	na	na	na	na	na	na	na	na
A00421HY T149 (8)		na	na	na	11.7	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A3. Quality control data for the September 1999 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	SO ₄ mg/L	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L	Alkalinity meq/L
<i>T155</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>10.2</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00309HY	T155 (7)	na	na	na	10.5	na	na	na	na	na	na	na	na	na	na	na
A00315HY	T155 (7)	na	na	na	10.4	na	na	na	na	na	na	na	na	na	na	na
A00404Hy	T155 (6)	na	na	na	9.9	na	na	na	na	na	na	na	na	na	na	na
A00421HY	T155 (8)	na	na	na	9.9	na	na	na	na	na	na	na	na	na	na	na
<i>T157</i>		<i>na</i>	<i>10.8</i>	<i>4.6</i>	<i>na</i>	<i>na</i>	<i>59.6</i>	<i>na</i>	<i>8.75</i>	<i>na</i>	<i>3.19</i>	<i>15.7</i>	<i>na</i>	<i>na</i>	<i>23.5</i>	<i>na</i>
M00426HY	T157 (10)	na	10.6	4.1	na	na	61	na	8.5	na	3.2	16.7	na	na	23	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip.

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Ce µg/L	Cl mg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
	<i>Hg7/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00613hy	Hg7/100 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00623hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg12/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00613hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg14/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00613hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00623hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg15/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00613hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00623hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg22/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00623hy	Hg22/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg22/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg22/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>I00517HY M106</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>13</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I00517HY	M106 (16)	na	na	na	na	na	na	na	na	13.3	na	na	na	na	na	na	na	na
B00620HY	M106 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M130</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00620HY	M130 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M134</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00620HY	M134 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M136</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00530HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00601HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00602HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00605HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Ce µg/L	Cl mg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
B00606HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00608HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M140</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00601HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00602HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00605HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00606HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00608HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M142</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00601HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00602HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00605HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00606HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00608HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M144</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>77</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I00517HY	M144 (16)	na	na	na	na	na	na	na	na	76.4	na	na	na	na	na	na	na	na
B00620HY	M144 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M146</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>46.1</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I00517HY	M146 (16)	na	na	na	na	na	na	na	na	48.5	na	na	na	na	na	na	na	na
B00620HY	M146 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M150</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00620HY	M150 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N63</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N00517HY	N63 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N64</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N00517HY	N64 (13)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I00517HY	N64 (15)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N66</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N00517HY	N66 (25)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N00517H0	N66 (12)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Ce µg/L	Cl mg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
	<i>NIST1643d/10</i>	12.76	5.602	14.48	50.65	1.253	na	0.647	na	na	2.5	1.853	2.05	na	na	na	na	na
M00706HY	NIST1643d/10 (9)	12	5.4	16	51	1.3	na	0.71	na	na	2.5	1.8	2.2	na	na	na	na	na
M00712HY	NIST1643d/10 (10)	13	5.4	17	51	1.3	na	0.70	na	na	2.5	1.8	2.2	na	na	na	na	na
M00714hy	NIST1643d/10 (9)	12	5.5	16	51	1.3	na	0.66	na	na	2.5	1.7	2.2	na	na	na	na	na
	<i>PPREE/100</i>	na	na	na	na	na	na	na	1.63	na	na	na	na	0.22	0.12	0.06	na	0.24
M00706HY	PPREE/100 (6)	na	na	na	na	na	na	na	1.6	na	na	na	na	0.22	0.12	0.060	na	0.24
M00712HY	PPREE/100 (6)	na	na	na	na	na	na	na	1.6	na	na	na	na	0.22	0.12	0.061	na	0.24
M00714hy	PPREE/100 (5)	na	na	na	na	na	na	na	1.6	na	na	na	na	0.22	0.12	0.060	na	0.24
	<i>SCREE/100</i>	na	na	na	na	na	na	na	0.246	na	na	na	na	0.0814	0.0437	0.0148	na	0.0829
M00706HY	SCREE/100 (5)	na	na	na	na	na	na	na	0.25	na	na	na	na	0.084	0.046	0.015	na	0.085
M00712HY	SCREE/100 (5)	na	na	na	na	na	na	na	0.24	na	na	na	na	0.081	0.044	0.014	na	0.086
M00714hy	SCREE/100 (5)	na	na	na	na	na	na	na	0.24	na	na	na	na	0.082	0.043	0.014	na	0.084
	<i>TI05</i>	na	na	na	na	na	73	na	na	na	na	na	na	na	na	na	24	na
A00630HY	TI05 (8)	na	na	na	na	na	76	na	na	na	na	na	na	na	na	na	23	na
A00707HY	TI05 (8)	na	na	na	na	na	74	na	na	na	na	na	na	na	na	na	24	na
A00714HY	TI05 (7)	na	na	na	na	na	72	na	na	na	na	na	na	na	na	na	20	na
	<i>TI31</i>	na	na	na	na	na	30.6	na	na	na	na	na	na	na	na	na	90.7	na
A00630HY	TI31 (7)	na	na	na	na	na	32	na	na	na	na	na	na	na	na	na	84	na
A00707HY	TI31 (7)	na	na	na	na	na	30	na	na	na	na	na	na	na	na	na	92	na
A00714HY	TI31 (6)	na	na	na	na	na	31	na	na	na	na	na	na	na	na	na	91	na
	<i>TI35</i>	10.5	10	13.1	67.8	59	10.4	50.5	na	na	40	79	62	na	na	na	228	na
M00706HY	TI35 (10)	8	10	11	67	59	na	51	na	na	40	79	62	na	na	na	na	na
M00712HY	TI35 (11)	8	10	11	66	59	na	50	na	na	39	79	62	na	na	na	na	na
M00714hy	TI35 (8)	8	10	11	65	59	na	50	na	na	40	79	62	na	na	na	na	na
A00630HY	TI35 (8)	na	na	na	na	na	11	na	na	na	na	na	na	na	na	na	229	na
A00707HY	TI35 (8)	na	na	na	na	na	10	na	na	na	na	na	na	na	na	na	227	na
A00714HY	TI35 (7)	na	na	na	na	na	10	na	na	na	na	na	na	na	na	na	228	na
	<i>TI39</i>	na	na	na	na	na	50.3	na	na	na	na	na	na	na	na	na	7.5	na
A00630HY	TI39 (19)	na	na	na	na	na	46	na	na	na	na	na	na	na	na	na	6.2	na
A00707HY	TI39 (19)	na	na	na	na	na	51	na	na	na	na	na	na	na	na	na	7.6	na
A00714HY	TI39 (16)	na	na	na	na	na	50	na	na	na	na	na	na	na	na	na	6.3	na

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Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Ce µg/L	Cl mg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
	<i>T147</i>	<i>14</i>	<i>2.39</i>	<i>50</i>	<i>73</i>	<i>16</i>	<i>41.1</i>	<i>15.9</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>12.8</i>	<i>11.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>8.4</i>	<i>na</i>
M00706HY	T147 (10)	12	2.3	50	76	16	na	16	na	na	na	13	12	na	na	na	na	na
M00712HY	T147 (11)	12	2.2	50	73	16	na	16	na	na	na	12	11	na	na	na	na	na
M00714hy	T147 (9)	12	2.2	51	73	15	na	16	na	na	na	12	10	na	na	na	na	na
A00630HY	T147 (7)	na	na	na	na	na	35	na	na	na	na	na	na	na	na	na	5.8	na
A00707HY	T147 (7)	na	na	na	na	na	40	na	na	na	na	na	na	na	na	na	7.8	na
A00714HY	T147 (6)	na	na	na	na	na	41	na	na	na	na	na	na	na	na	na	6.7	na
	<i>T149</i>	<i>35.5</i>	<i>0.98</i>	<i>128</i>	<i>42.5</i>	<i>na</i>	<i>42.3</i>	<i>2.18</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>48.8</i>	<i>5</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>70</i>	<i>na</i>
M00706HY	T149 (19)	38	0.80	125	43	na	na	2.2	na	na	na	49	7.1	na	na	na	na	na
M00712HY	T149 (19)	36	0.82	128	42	na	na	2.2	na	na	na	48	7.6	na	na	na	na	na
M00714hy	T149 (16)	36	0.73	128	42	na	na	2.2	na	na	na	49	4.6	na	na	na	na	na
A00630HY	T149 (8)	na	na	na	na	na	45	na	na	na	na	na	na	na	na	na	73	na
A00707HY	T149 (8)	na	na	na	na	na	42	na	na	na	na	na	na	na	na	na	72	na
A00714HY	T149 (7)	na	na	na	na	na	42	na	na	na	na	na	na	na	na	na	71	na
	<i>T155</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>42</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>88</i>	<i>na</i>
A00630HY	T155 (8)	na	na	na	na	na	41	na	na	na	na	na	na	na	na	na	90	na
A00707HY	T155 (8)	na	na	na	na	na	41	na	na	na	na	na	na	na	na	na	91	na
A00714HY	T155 (7)	na	na	na	na	na	41	na	na	na	na	na	na	na	na	na	89	na
	<i>T157</i>	<i>55.5</i>	<i>25.4</i>	<i>70.4</i>	<i>118</i>	<i>13</i>	<i>na</i>	<i>5.8</i>	<i>na</i>	<i>na</i>	<i>4.03</i>	<i>31.3</i>	<i>24.8</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
M00706HY	T157 (9)	53	26	69	119	13	na	5.9	na	na	4.0	33	25	na	na	na	na	na
M00712HY	T157 (10)	54	25	70	118	13	na	5.7	na	na	4.0	31	25	na	na	na	na	na
M00714hy	T157 (9)	54	25	71	118	13	na	5.9	na	na	4.1	32	26	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Hg ng/L	Ho µg/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
H00613hy	<i>Hg7/100</i>	2.2	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00623hy	Hg7/100 (7)	2.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg7/100 (6)	2.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg7/100 (6)	2.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	Hg7/100 (6)	2.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg12/100</i>	14.4	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00613hy	Hg12/100 (6)	17.7	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg14/100</i>	7.0	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00613hy	Hg14/100 (6)	8.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00623hy	Hg14/100 (6)	7.7	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg14/100 (6)	6.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg14/100 (6)	6.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg15/100</i>	4.1	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00613hy	Hg15/100 (6)	6.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00623hy	Hg15/100 (6)	4.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg15/100 (6)	3.7	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg15/100 (6)	3.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg22/100</i>	12.4	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00623hy	Hg22/100 (6)	12.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg22/100 (6)	11.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg22/100 (6)	10.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I00517HY	<i>M106</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I00517HY	M106 (16)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M106 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M130</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00620HY	M130 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M134</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00620HY	M134 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M136</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00530HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00601HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00602HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00605HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Hg ng/L	Ho µg/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
B00606HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00608HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M140</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00601HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00602HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00605HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00606HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00608HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M142</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00601HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00602HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00605HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00606HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00608HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M144</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I00517HY	M144 (16)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M144 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M146</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I00517HY	M146 (16)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M146 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M150</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B00620HY	M150 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N63</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.15</i>	<i>0.084</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.14</i>	<i>na</i>	<i>na</i>
N00517HY	N63 (7)	na	na	na	na	na	na	na	na	na	0.06	0.081	na	na	na	0.12	na	na
	<i>N64</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>1.26</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.86</i>	<i>na</i>	<i>na</i>
N00517HY	N64 (13)	na	na	na	na	na	na	na	na	na	na	1.28	na	na	na	0.88	na	na
I00517HY	N64 (15)	na	na	na	na	na	na	na	na	na	na	1.26	na	na	na	na	na	na
	<i>N66</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.77</i>	<i>0.93</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.81</i>	<i>na</i>	<i>na</i>
N00517HY	N66 (25)	na	na	na	na	na	na	na	na	na	0.77	0.94	na	na	na	0.81	na	na
N00517H0	N66 (12)	na	na	na	na	na	na	na	na	na	0.81	na	na	na	na	0.73	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg P/L, milligrams per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Hg ng/L	Ho µg/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
	<i>NIST1643d/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>1.65</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>11.29</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>5.81</i>	<i>na</i>	<i>1.815</i>	<i>na</i>
M00706HY	NIST1643d/10 (9)	na	na	na	na	1.74	na	na	na	11	na	na	na	na	6.0	na	1.9	na
M00712HY	NIST1643d/10 (10)	na	na	na	na	1.81	na	na	na	12	na	na	na	na	5.9	na	1.9	na
M00714hy	NIST1643d/10 (9)	na	na	na	na	1.79	na	na	na	10	na	na	na	na	5.9	na	1.9	na
	<i>PPREE/100</i>	<i>na</i>	<i>0.0443</i>	<i>na</i>	<i>0.804</i>	<i>na</i>	<i>0.0111</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.934</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.212</i>
M00706HY	PPREE/100 (6)	na	0.044	na	0.81	na	0.011	na	na	na	na	na	na	0.94	na	na	na	0.21
M00712HY	PPREE/100 (6)	na	0.045	na	0.80	na	0.011	na	na	na	na	na	na	0.94	na	na	na	0.21
M00714hy	PPREE/100 (5)	na	0.044	na	0.81	na	0.011	na	na	na	na	na	na	0.94	na	na	na	0.21
	<i>SCREE/100</i>	<i>na</i>	<i>0.0162</i>	<i>na</i>	<i>0.099</i>	<i>na</i>	<i>0.00453</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.222</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.0431</i>
M00706HY	SCREE/100 (5)	na	0.016	na	0.10	na	0.0048	na	na	na	na	na	na	0.23	na	na	na	0.043
M00712HY	SCREE/100 (5)	na	0.016	na	0.10	na	0.0046	na	na	na	na	na	na	0.23	na	na	na	0.042
M00714hy	SCREE/100 (5)	na	0.016	na	0.10	na	0.0045	na	na	na	na	na	na	0.23	na	na	na	0.043
	<i>T105</i>	<i>na</i>	<i>na</i>	<i>19.5</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>66.8</i>	<i>73</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00630HY	T105 (8)	na	na	20	na	na	na	67	78	na	na	na	na	na	na	na	na	na
A00707HY	T105 (8)	na	na	19	na	na	na	71	79	na	na	na	na	na	na	na	na	na
A00714HY	T105 (7)	na	na	20	na	na	na	67	77	na	na	na	na	na	na	na	na	na
	<i>T131</i>	<i>na</i>	<i>na</i>	<i>2.39</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>8</i>	<i>37.8</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>21.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00630HY	T131 (7)	na	na	2.1	na	na	na	7.8	34	na	na	na	21	na	na	na	na	na
A00707HY	T131 (7)	na	na	2.4	na	na	na	8.0	38	na	na	na	22	na	na	na	na	na
A00714HY	T131 (6)	na	na	2.3	na	na	na	7.9	38	na	na	na	22	na	na	na	na	na
	<i>T135</i>	<i>na</i>	<i>na</i>	<i>0.96</i>	<i>na</i>	<i>73.7</i>	<i>na</i>	<i>2</i>	<i>423</i>	<i>63</i>	<i>na</i>	<i>na</i>	<i>30.8</i>	<i>na</i>	<i>65.6</i>	<i>na</i>	<i>103</i>	<i>na</i>
M00706HY	T135 (10)	na	na	na	na	74	na	na	na	63	na	na	na	na	65	na	102	na
M00712HY	T135 (11)	na	na	na	na	72	na	na	na	63	na	na	na	na	65	na	103	na
M00714hy	T135 (8)	na	na	na	na	74	na	na	na	57	na	na	na	na	65	na	103	na
A00630HY	T135 (8)	na	na	0.93	na	na	na	1.9	406	na	na	na	28	na	na	na	na	na
A00707HY	T135 (8)	na	na	0.97	na	na	na	2.1	425	na	na	na	31	na	na	na	na	na
A00714HY	T135 (7)	na	na	0.97	na	na	na	2.0	424	na	na	na	31	na	na	na	na	na
	<i>T139</i>	<i>na</i>	<i>na</i>	<i>2.73</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>10</i>	<i>2.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00630HY	T139 (19)	na	na	2.5	na	na	na	8.8	2.2	na	na	na	na	na	na	na	na	na
A00707HY	T139 (19)	na	na	2.7	na	na	na	10	2.3	na	na	na	na	na	na	na	na	na
A00714HY	T139 (16)	na	na	2.7	na	na	na	10	2.5	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Hg ng/L	Ho µg/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
	<i>T147</i>	<i>na</i>	<i>na</i>	<i>3.52</i>	<i>na</i>	<i>18</i>	<i>na</i>	<i>8.2</i>	<i>17.2</i>	<i>11.8</i>	<i>na</i>	<i>na</i>	<i>52.6</i>	<i>na</i>	<i>13.6</i>	<i>na</i>	<i>13.8</i>	<i>na</i>
M00706HY	T147 (10)	na	na	na	na	18	na	na	na	12	na	na	na	na	14	na	14	na
M00712HY	T147 (11)	na	na	na	na	17	na	na	na	12	na	na	na	na	13	na	14	na
M00714hy	T147 (9)	na	na	na	na	17	na	na	na	11	na	na	na	na	13	na	14	na
A00630HY	T147 (7)	na	na	3.3	na	na	na	6.5	14	na	na	na	45	na	na	na	na	na
A00707HY	T147 (7)	na	na	3.5	na	na	na	8.2	17	na	na	na	49	na	na	na	na	na
A00714HY	T147 (6)	na	na	3.6	na	na	na	8.1	17	na	na	na	na	na	na	na	na	na
	<i>T149</i>	<i>na</i>	<i>na</i>	<i>2</i>	<i>na</i>	<i>44.2</i>	<i>na</i>	<i>13.1</i>	<i>11.8</i>	<i>1.25</i>	<i>na</i>	<i>na</i>	<i>42.8</i>	<i>na</i>	<i>31.2</i>	<i>na</i>	<i>8.84</i>	<i>na</i>
M00706HY	T149 (19)	na	na	na	na	44	na	na	na	1.1	na	na	na	na	32	na	8.8	na
M00712HY	T149 (19)	na	na	na	na	44	na	na	na	1.1	na	na	na	na	31	na	9.1	na
M00714hy	T149 (16)	na	na	na	na	44	na	na	na	1.0	na	na	na	na	31	na	9.0	na
A00630HY	T149 (8)	na	na	2.0	na	na	na	13	11	na	na	na	40	na	na	na	na	na
A00707HY	T149 (8)	na	na	2.0	na	na	na	13	12	na	na	na	42	na	na	na	na	na
A00714HY	T149 (7)	na	na	2.0	na	na	na	13	12	na	na	na	42	na	na	na	na	na
	<i>T155</i>	<i>na</i>	<i>na</i>	<i>5.64</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>11.1</i>	<i>50.9</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>28.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00630HY	T155 (8)	na	na	5.7	na	na	na	11	50	na	na	na	27	na	na	na	na	na
A00707HY	T155 (8)	na	na	5.7	na	na	na	11	53	na	na	na	29	na	na	na	na	na
A00714HY	T155 (7)	na	na	5.6	na	na	na	11	52	na	na	na	28	na	na	na	na	na
	<i>T157</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>32.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>13</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>30</i>	<i>na</i>	<i>6.9</i>	<i>na</i>
M00706HY	T157 (9)	na	na	na	na	33	na	na	na	12	na	na	na	na	31	na	6.5	na
M00712HY	T157 (10)	na	na	na	na	33	na	na	na	12	na	na	na	na	30	na	6.6	na
M00714hy	T157 (9)	na	na	na	na	33	na	na	na	10	na	na	na	na	31	na	6.5	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A4. Quality control data for the May 2000 trip – continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	SO ₄ mg/L	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L	Alkalinity meq/L
H00613hy	<i>Hg7/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00623hy	Hg7/100 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg7/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg12/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00613hy	Hg12/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg14/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00613hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00623hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg14/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg15/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00613hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00623hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg15/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg22/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H00623hy	Hg22/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n02hy	Hg22/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H00n03hy	Hg22/100 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
<i>I00517HY</i>	<i>M106</i>	27.6	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	0.156
I00517HY	M106 (16)	25.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M106 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.157
	<i>M130</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	1.200
B00620HY	M130 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.125
	<i>M134</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	1.258
B00620HY	M134 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.271
	<i>M136</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	3.040
B00530HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.048
B00601HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.068
B00602HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.071
B00605HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.063

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Table A4. Quality control data for the May 2000 trip – continued

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Analysis Run	Standard ¹	SO ₄ mg/L	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L	Alkalinity meq/L
B00606HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.071
B00608HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.095
B00620HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.094
	<i>M140</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	2.280
B00601HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.279
B00602HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.211
B00605HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.275
B00606HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.281
B00608HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.288
B00620HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.291
	<i>M142</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	3.600
B00601HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.634
B00602HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.722
B00605HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.631
B00606HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.623
B00608HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.638
B00620HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.644
	<i>M144</i>	<i>210</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	1.776
I00517HY	M144 (16)	231	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M144 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.736
	<i>M146</i>	<i>69</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	1.152
I00517HY	M146 (16)	68.8	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B00620HY	M146 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.041
	<i>M150</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	0.528
B00620HY	M150 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	0.499
	<i>N63</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N00517HY	N63 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N64</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N00517HY	N64 (13)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I00517HY	N64 (15)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N66</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N00517HY	N66 (25)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N00517H0	N66 (12)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

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Table A4. Quality control data for the May 2000 trip – continued

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Analysis Run	Standard ¹	SO ₄ mg/L	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L	Alkalinity meq/L
	<i>NIST1643d/10</i>	<i>na</i>	<i>5.41</i>	<i>1.143</i>	<i>na</i>	<i>na</i>	<i>29.48</i>	<i>na</i>	<i>0.728</i>	<i>na</i>	<i>na</i>	<i>3.51</i>	<i>na</i>	<i>na</i>	<i>7.248</i>	<i>na</i>
M00706HY	NIST1643d/10 (9)	na	5.5	1.0	na	na	30	na	0.73	na	na	3.6	na	na	7.0	na
M00712HY	NIST1643d/10 (10)	na	5.5	1.1	na	na	30	na	0.72	na	na	3.7	na	na	7.4	na
M00714hy	NIST1643d/10 (9)	na	5.5	1.1	na	na	29	na	0.71	na	na	3.5	na	na	7.3	na
	<i>PPREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.204</i>	<i>na</i>	<i>0.0367</i>	<i>na</i>	<i>0.0148</i>	<i>na</i>	<i>na</i>	<i>1.348</i>	<i>0.0818</i>	<i>na</i>	<i>na</i>
M00706HY	PPREE/100 (6)	na	na	na	na	0.20	na	0.037	na	0.015	na	na	1.4	0.081	na	na
M00712HY	PPREE/100 (6)	na	na	na	na	0.21	na	0.037	na	0.015	na	na	1.4	0.082	na	na
M00714hy	PPREE/100 (5)	na	na	na	na	0.20	na	0.037	na	0.015	na	na	1.3	0.082	na	na
	<i>SCREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.0674</i>	<i>na</i>	<i>0.0134</i>	<i>na</i>	<i>0.00585</i>	<i>na</i>	<i>na</i>	<i>0.472</i>	<i>0.034</i>	<i>na</i>	<i>na</i>
M00706HY	SCREE/100 (5)	na	na	na	na	0.070	na	0.014	na	0.0058	na	na	0.48	0.034	na	na
M00712HY	SCREE/100 (5)	na	na	na	na	0.065	na	0.014	na	0.0056	na	na	0.47	0.034	na	na
M00714hy	SCREE/100 (5)	na	na	na	na	0.071	na	0.014	na	0.0060	na	na	0.47	0.033	na	na
	<i>T105</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>25.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00630HY	T105 (8)	na	na	na	26	na	na	na	na	na	na	na	na	na	na	na
A00707HY	T105 (8)	na	na	na	25	na	na	na	na	na	na	na	na	na	na	na
A00714HY	T105 (7)	na	na	na	25	na	na	na	na	na	na	na	na	na	na	na
	<i>T131</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>5.8</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00630HY	T131 (7)	na	na	na	4.9	na	na	na	na	na	na	na	na	na	na	na
A00707HY	T131 (7)	na	na	na	6.1	na	na	na	na	na	na	na	na	na	na	na
A00714HY	T131 (6)	na	na	na	6.0	na	na	na	na	na	na	na	na	na	na	na
	<i>T135</i>	<i>na</i>	<i>76.3</i>	<i>10</i>	<i>4.28</i>	<i>na</i>	<i>46</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>52.8</i>	<i>na</i>	<i>na</i>	<i>48.2</i>	<i>na</i>
M00706HY	T135 (10)	na	76	10	na	na	47	na	na	na	na	53	na	na	48	na
M00712HY	T135 (11)	na	76	10	na	na	47	na	na	na	na	52	na	na	49	na
M00714hy	T135 (8)	na	77	10	na	na	46	na	na	na	na	52	na	na	48	na
A00630HY	T135 (8)	na	na	na	4.1	na	na	na	na	na	na	na	na	na	na	na
A00707HY	T135 (8)	na	na	na	4.5	na	na	na	na	na	na	na	na	na	na	na
A00714HY	T135 (7)	na	na	na	4.2	na	na	na	na	na	na	na	na	na	na	na
	<i>T139</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>9.31</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00630HY	T139 (19)	na	na	na	7.9	na	na	na	na	na	na	na	na	na	na	na
A00707HY	T139 (19)	na	na	na	9.4	na	na	na	na	na	na	na	na	na	na	na
A00714HY	T139 (16)	na	na	na	9.3	na	na	na	na	na	na	na	na	na	na	na

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<i>T147</i>		<i>na</i>	<i>10.5</i>	<i>10.1</i>	<i>24</i>	<i>na</i>	<i>313</i>	<i>na</i>	<i>20</i>	<i>na</i>	<i>3.21</i>	<i>15.2</i>	<i>na</i>	<i>na</i>	<i>14</i>	<i>na</i>
M00706HY	T147 (10)	na	10	11	na	na	325	na	19	na	3.3	15	na	na	13	na
M00712HY	T147 (11)	na	10	11	na	na	318	na	19	na	3.2	15	na	na	13	na
M00714hy	T147 (9)	na	10	10	na	na	316	na	19	na	3.2	15	na	na	11	na
A00630HY	T147 (7)	na	na	na	21	na	na	na	na	na	na	na	na	na	na	na
A00707HY	T147 (7)	na	na	na	24	na	na	na	na	na	na	na	na	na	na	na
A00714HY	T147 (6)	na	na	na	25	na	na	na	na	na	na	na	na	na	na	na
<i>T149</i>		<i>na</i>	<i>21.1</i>	<i>2.1</i>	<i>11.8</i>	<i>na</i>	<i>331</i>	<i>na</i>	<i>31.4</i>	<i>na</i>	<i>2.71</i>	<i>31</i>	<i>na</i>	<i>na</i>	<i>5.8</i>	<i>na</i>
M00706HY	T149 (19)	na	20	1.6	na	na	331	na	32	na	2.6	30	na	na	2.9	na
M00712HY	T149 (19)	na	21	1.7	na	na	331	na	31	na	2.6	30	na	na	5.1	na
M00714hy	T149 (16)	na	21	1.8	na	na	331	na	31	na	2.6	30	na	na	na	na
A00630HY	T149 (8)	na	na	na	12	na	na	na	na	na	na	na	na	na	na	na
A00707HY	T149 (8)	na	na	na	12	na	na	na	na	na	na	na	na	na	na	na
A00714HY	T149 (7)	na	na	na	12	na	na	na	na	na	na	na	na	na	na	na
<i>T155</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>10.2</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A00630HY	T155 (8)	na	na	na	9.0	na	na	na	na	na	na	na	na	na	na	na
A00707HY	T155 (8)	na	na	na	10.0	na	na	na	na	na	na	na	na	na	na	na
A00714HY	T155 (7)	na	na	na	9.8	na	na	na	na	na	na	na	na	na	na	na
<i>T157</i>		<i>na</i>	<i>10.8</i>	<i>4.6</i>	<i>na</i>	<i>na</i>	<i>59.6</i>	<i>na</i>	<i>8.75</i>	<i>na</i>	<i>3.19</i>	<i>15.7</i>	<i>na</i>	<i>na</i>	<i>23.5</i>	<i>na</i>
M00706HY	T157 (9)	na	11	4.0	na	na	60	na	8.6	na	3.2	17	na	na	23	na
M00712HY	T157 (10)	na	11	4.1	na	na	59	na	8.5	na	3.3	16	na	na	23	na
M00714hy	T157 (9)	na	11	4.0	na	na	59	na	8.6	na	3.3	16	na	na	23	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip.

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Cl mg/L	Ce µg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
	<i>Hg7/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02807HY	Hg7/100 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02808HY	Hg7/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg15/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02807HY	Hg15/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02808HY	Hg15/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg22/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02807HY	Hg22/100 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02808HY	Hg22/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg26/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02807HY	Hg26/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02808HY	Hg26/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M98</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>32.5</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01927HY	M98 (7)	na	na	na	na	na	na	na	32.4	na	na	na	na	na	na	na	na	na
I01928HY	M98 (4)	na	na	na	na	na	na	na	31.7	na	na	na	na	na	na	na	na	na
I01O02HY	M98 (3)	na	na	na	na	na	na	na	32.8	na	na	na	na	na	na	na	na	na
	<i>M106</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>13</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01928HY	M106 (4)	na	na	na	na	na	na	na	12.2	na	na	na	na	na	na	na	na	na
I01O02HY	M106 (3)	na	na	na	na	na	na	na	11.6	na	na	na	na	na	na	na	na	na
	<i>M110</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01927HY	M110 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M136</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B01N05HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N07HY	M136 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N14HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N19HY	M136 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N26HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N28HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M140</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B01N05HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N07HY	M140 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N14HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N19HY	M140 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N26HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N28HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Cl mg/L	Ce µg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
	<i>M142</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B01N05HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N07HY	M142 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N14HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N19HY	M142 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N26HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N28HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M144</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	77	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01928HY	M144 (4)	na	na	na	na	na	na	na	75	na	na	na	na	na	na	na	na	na
I01O02HY	M144 (4)	na	na	na	na	na	na	na	78	na	na	na	na	na	na	na	na	na
	<i>M146</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	46.1	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01928HY	M146 (7)	na	na	na	na	na	na	na	48.6	na	na	na	na	na	na	na	na	na
I01O02HY	M146 (6)	na	na	na	na	na	na	na	47.5	na	na	na	na	na	na	na	na	na
	<i>N62</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01927HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01928HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01O02HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N68</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N01O03HY	N68 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01927HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01928HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01O02HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N69</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N01926HY	N69 (11)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N01O03HY	N69 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N70</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N01926HY	N70 (12)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N01O03HY	N70 (11)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01O02HY	N70 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>NIST1643d/10</i>	<i>12.76</i>	<i>5.602</i>	<i>14.48</i>	<i>50.65</i>	<i>1.253</i>	<i>na</i>	<i>0.647</i>	<i>na</i>	<i>na</i>	<i>2.5</i>	<i>1.853</i>	<i>2.05</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
M01N16HY	NIST1643d/10 (10)	13.3	5.4	17.1	51	1.22	na	0.64	na	na	2.5	1.7	2.2	na	na	na	na	na
M01N09HY	NIST1643d/10 (9)	12.9	5.3	16.0	50	1.21	na	0.61	na	na	2.5	1.7	2.0	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

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Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Cl mg/L	Ce µg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
	<i>PPREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>1.63</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.22</i>	<i>0.12</i>	<i>0.06</i>	<i>na</i>	<i>0.24</i>
M01N09HY	PPREE/100 (6)	na	na	na	na	na	na	na	na	1.62	na	na	na	0.22	0.12	0.060	na	0.24
M01N16HY	PPREE/100 (6)	na	na	na	na	na	na	na	na	1.63	na	na	na	0.22	0.12	0.060	na	0.24
M01N20HY	PPREE/100 (6)	na	na	na	na	na	na	na	na	1.62	na	na	na	0.22	0.12	0.060	na	0.24
	<i>SCREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.246</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.0814</i>	<i>0.0437</i>	<i>0.0148</i>	<i>na</i>	<i>0.0829</i>
M01N09HY	SCREE/100 (5)	na	na	na	na	na	na	na	na	0.25	na	na	na	0.084	0.048	0.015	na	0.088
M01N16HY	SCREE/100 (5)	na	na	na	na	na	na	na	na	0.26	na	na	na	0.088	0.047	0.015	na	0.094
M01N20HY	SCREE/100 (5)	na	na	na	na	na	na	na	na	0.25	na	na	na	0.081	0.046	0.016	na	0.088
	<i>T131</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>30.6</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>90.7</i>	<i>na</i>
A01O25HY	T131 (7)	na	na	na	na	na	31	na	na	na	na	na	na	na	na	na	94	na
A01N09HY	T131 (8)	na	na	na	na	na	32	na	na	na	na	na	na	na	na	na	92	na
	<i>T135</i>	<i>10.5</i>	<i>10</i>	<i>13.1</i>	<i>67.8</i>	<i>59</i>	<i>na</i>	<i>50.5</i>	<i>na</i>	<i>na</i>	<i>40</i>	<i>79</i>	<i>62</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
M01N09HY	T135 (10)	9.4	10.0	11.0	67	57	na	50	na	na	40	77	62	na	na	na	na	na
M01N16HY	T135 (10)	9.5	10.0	10.5	68	58	na	50	na	na	40	78	62	na	na	na	na	na
M01N20HY	T135 (11)	9.4	10.0	11.0	66	58	na	51	na	na	40	78	62	na	na	na	na	na
	<i>T137</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>38.1</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>71</i>	<i>na</i>
A01O25HY	T137 (8)	na	na	na	na	na	38	na	na	na	na	na	na	na	na	na	69	na
A01N09HY	T137 (9)	na	na	na	na	na	37	na	na	na	na	na	na	na	na	na	69	na
	<i>T143</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>53.7</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>222</i>	<i>na</i>
A01O25HY	T143 (8)	na	na	na	na	na	52	na	na	na	na	na	na	na	na	na	215	na
A01N09HY	T143 (9)	na	na	na	na	na	53	na	na	na	na	na	na	na	na	na	206	na
	<i>T147</i>	<i>14</i>	<i>2.39</i>	<i>50</i>	<i>73</i>	<i>16</i>	<i>na</i>	<i>15.9</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>12.8</i>	<i>11.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
M01N09HY	T147 (10)	13	2.3	51	75	16	na	16	na	na	na	12	11.4	na	na	na	na	na
M01N16HY	T147 (10)	13	2.4	52	76	16	na	16	na	na	na	12	11.1	na	na	na	na	na
M01N20HY	T147 (11)	13	2.4	50	73	16	na	16	na	na	na	12	11.4	na	na	na	na	na
	<i>T149</i>	<i>35.5</i>	<i>0.98</i>	<i>128</i>	<i>42.5</i>	<i>na</i>	<i>na</i>	<i>2.18</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>48.8</i>	<i>5</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
M01N16HY	T149 (18)	38	0.93	127	44	na	na	2.2	na	na	na	49	7.5	na	na	na	na	na
M01N09HY	T149 (19)	38	0.90	129	43	na	na	2.2	na	na	na	49	7.6	na	na	na	na	na
M01N20HY	T149 (19)	37	0.90	127	43	na	na	2.2	na	na	na	49	7.6	na	na	na	na	na
	<i>T151</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>37.9</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>10</i>	<i>na</i>
A01O25HY	T151 (8)	na	na	na	na	na	38	na	na	na	na	na	na	na	na	na	9.9	na
A01N09HY	T151 (9)	na	na	na	na	na	37	na	na	na	na	na	na	na	na	na	10.3	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Cl mg/L	Ce µg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
<i>T153</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	27.5	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	75	<i>na</i>
A01O25HY	T153 (20)	na	na	na	na	na	27	na	na	na	na	na	na	na	na	na	na	75
A01N09HY	T153 (22)	na	na	na	na	na	28	na	na	na	na	na	na	na	na	na	na	75
<i>T155</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	42	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	88	<i>na</i>
A01O25HY	T155 (7)	na	na	na	na	na	34	na	na	na	na	na	na	na	na	na	76	na
A01N09HY	T155 (7)	na	na	na	na	na	43	na	na	na	na	na	na	na	na	na	86	na
<i>T157</i>		55.5	25.4	70.4	118	13	6.19	5.8	<i>na</i>	<i>na</i>	4.03	31.3	24.8	<i>na</i>	<i>na</i>	<i>na</i>	76	<i>na</i>
M01N20HY	T157 (10)	56	25	70	119	13	na	5.9	na	na	4.2	32	25	na	na	na	na	na
M01N09HY	T157 (9)	57	25	68	118	13	na	5.8	na	na	4.2	32	25	na	na	na	na	na
M01N16HY	T157 (9)	57	25	70	122	13	na	5.8	na	na	4.1	32	24	na	na	na	na	na
A01O25HY	T157 (7)	na	na	na	na	na	6.2	na	na	na	na	na	na	na	na	na	80	na
A01N09HY	T157 (8)	na	na	na	na	na	6.7	na	na	na	na	na	na	na	na	na	82	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Hg ng/L	Ho µg/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
	<i>Hg7/100</i>	2.2	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02807HY	Hg7/100 (9)	3.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02808HY	Hg7/100 (10)	2.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg15/100</i>	4.1	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02807HY	Hg15/100 (10)	4.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02808HY	Hg15/100 (10)	3.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg22/100</i>	12.4	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02807HY	Hg22/100 (9)	11.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02808HY	Hg22/100 (10)	12.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg26/100</i>	7.0	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02807HY	Hg26/100 (10)	7.7	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02808HY	Hg26/100 (10)	7.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M98</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01927HY	M98 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01928HY	M98 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01002HY	M98 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M106</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01928HY	M106 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01002HY	M106 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M110</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01927HY	M110 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M136</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B01N05HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N07HY	M136 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N14HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N19HY	M136 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N26HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N28HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M140</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B01N05HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N07HY	M140 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N14HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N19HY	M140 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N26HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N28HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Hg ng/L	Ho µg/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
	<i>M142</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B01N05HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N07HY	M142 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N14HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N19HY	M142 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N26HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B01N28HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M144</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01928HY	M144 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01O02HY	M144 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M146</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01928HY	M146 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01O02HY	M146 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N62</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01927HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	0.92	na	na	na	na	na	na
I01928HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	0.83	na	na	na	na	na	na
I01O02HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	0.91	na	na	na	na	na	na
	<i>N68</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	0.86	na	na	na	na	na	na
N01O03HY	N68 (5)	na	na	na	na	na	na	na	na	na	0.480	1.68	na	na	na	0.809	na	na
I01927HY	N68 (1)	na	na	na	na	na	na	na	na	na	0.460	1.67	na	na	na	0.742	na	na
I01928HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	1.74	na	na	na	na	na	na
I01O02HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	1.71	na	na	na	na	na	na
	<i>N69</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	1.70	na	na	na	na	na	na
N01926HY	N69 (11)	na	na	na	na	na	na	na	na	na	0.086	0.084	na	na	na	0.086	na	na
N01O03HY	N69 (10)	na	na	na	na	na	na	na	na	na	0.067	na	na	na	na	na	na	na
	<i>N70</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	0.068	na	na	na	0.050	na	na
N01926HY	N70 (12)	na	na	na	na	na	na	na	na	na	0.580	0.99	na	na	na	0.583	na	na
N01O03HY	N70 (11)	na	na	na	na	na	na	na	na	na	0.578	0.93	na	na	na	0.651	na	na
I01O02HY	N70 (1)	na	na	na	na	na	na	na	na	na	na	0.98	na	na	na	na	na	na
	<i>NIST1643d/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>1.65</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>11.29</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>5.81</i>	<i>na</i>	<i>1.815</i>	<i>na</i>
M01N16HY	NIST1643d/10 (10)	na	na	na	na	1.73	na	na	na	11.5	na	na	na	na	5.9	na	1.88	na
M01N09HY	NIST1643d/10 (9)	na	na	na	na	1.72	na	na	na	11.2	na	na	na	na	5.8	na	1.88	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Hg ng/L	Ho µg/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
	<i>PPREE/100</i>	<i>na</i>	<i>0.0443</i>	<i>na</i>	<i>0.804</i>	<i>na</i>	<i>0.0111</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.934</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.212</i>
M01N09HY	PPREE/100 (6)	na	0.044	na	0.80	na	0.011	na	na	na	na	na	na	0.93	na	na	na	0.21
M01N16HY	PPREE/100 (6)	na	0.045	na	0.80	na	0.011	na	na	na	na	na	na	0.93	na	na	na	0.21
M01N20HY	PPREE/100 (6)	na	0.044	na	0.80	na	0.011	na	na	na	na	na	na	0.93	na	na	na	0.21
	<i>SCREE/100</i>	<i>na</i>	<i>0.0162</i>	<i>na</i>	<i>0.099</i>	<i>na</i>	<i>0.00453</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.222</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.0431</i>
M01N09HY	SCREE/100 (5)	na	0.016	na	0.10	na	0.0045	na	na	na	na	na	na	0.23	na	na	na	0.045
M01N16HY	SCREE/100 (5)	na	0.017	na	0.11	na	0.0045	na	na	na	na	na	na	0.24	na	na	na	0.046
M01N20HY	SCREE/100 (5)	na	0.017	na	0.11	na	0.0047	na	na	na	na	na	na	0.23	na	na	na	0.044
	<i>T131</i>	<i>na</i>	<i>na</i>	<i>2.39</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>8</i>	<i>37.8</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>21.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A01O25HY	T131 (7)	na	na	2.4	na	na	na	7.9	38	na	na	na	21	na	na	na	na	na
A01N09HY	T131 (8)	na	na	2.4	na	na	na	8.1	40	na	na	na	22	na	na	na	na	na
	<i>T135</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>73.7</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>63</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>65.6</i>	<i>na</i>	<i>103</i>	<i>na</i>
M01N09HY	T135 (10)	na	na	na	na	73	na	na	na	63	na	na	na	na	65	na	103	na
M01N16HY	T135 (10)	na	na	na	na	73	na	na	na	63	na	na	na	na	66	na	103	na
M01N20HY	T135 (11)	na	na	na	na	70	na	na	na	63	na	na	na	na	66	na	103	na
	<i>T137</i>	<i>na</i>	<i>na</i>	<i>1.19</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>10.1</i>	<i>98</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>22</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A01O25HY	T137 (8)	na	na	1.2	na	na	na	10.0	96	na	na	na	21	na	na	na	na	na
A01N09HY	T137 (9)	na	na	1.2	na	na	na	9.7	100	na	na	na	21	na	na	na	na	na
	<i>T143</i>	<i>na</i>	<i>na</i>	<i>2.5</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>10.4</i>	<i>18.2</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>34</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A01O25HY	T143 (8)	na	na	2.5	na	na	na	10.2	18	na	na	na	33	na	na	na	na	na
A01N09HY	T143 (9)	na	na	2.4	na	na	na	10.1	19	na	na	na	33	na	na	na	na	na
	<i>T147</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>18</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>11.8</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>13.6</i>	<i>na</i>	<i>13.8</i>	<i>na</i>
M01N09HY	T147 (10)	na	na	na	na	17	na	na	na	12	na	na	na	na	13	na	14	na
M01N16HY	T147 (10)	na	na	na	na	18	na	na	na	12	na	na	na	na	13	na	14	na
M01N20HY	T147 (11)	na	na	na	na	18	na	na	na	12	na	na	na	na	14	na	14	na
	<i>T149</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>44.2</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>1.25</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>31.2</i>	<i>na</i>	<i>8.84</i>	<i>na</i>
M01N16HY	T149 (18)	na	na	na	na	44	na	na	na	1.1	na	na	na	na	32	na	9.1	na
M01N09HY	T149 (19)	na	na	na	na	44	na	na	na	1.1	na	na	na	na	32	na	9.2	na
M01N20HY	T149 (19)	na	na	na	na	44	na	na	na	1.1	na	na	na	na	32	na	9.1	na
	<i>T151</i>	<i>na</i>	<i>na</i>	<i>1.95</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>17.5</i>	<i>13</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>55</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A01O25HY	T151 (8)	na	na	2.0	na	na	na	17	13	na	na	na	57	na	na	na	na	na
A01N09HY	T151 (9)	na	na	1.9	na	na	na	17	14	na	na	na	56	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Hg ng/L	Ho µg/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
	<i>T153</i>	<i>na</i>	<i>na</i>	<i>1.6</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>8.72</i>	<i>74.5</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>28.7</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A01O25HY	T153 (20)	na	na	1.6	na	na	na	8.7	74	na	na	na	28	na	na	na	na	na
A01N09HY	T153 (22)	na	na	1.6	na	na	na	8.7	79	na	na	na	29	na	na	na	na	na
	<i>T155</i>	<i>na</i>	<i>na</i>	<i>5.64</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>11.1</i>	<i>50.9</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>28.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A01O25HY	T155 (7)	na	na	4.7	na	na	na	8.9	41	na	na	na	22	na	na	na	na	na
A01N09HY	T155 (7)	na	na	5.6	na	na	na	11.0	54	na	na	na	28	na	na	na	na	na
	<i>T157</i>	<i>na</i>	<i>na</i>	<i>2.51</i>	<i>na</i>	<i>32.4</i>	<i>na</i>	<i>1.03</i>	<i>143</i>	<i>13</i>	<i>na</i>	<i>na</i>	<i>60.7</i>	<i>na</i>	<i>30</i>	<i>na</i>	<i>6.9</i>	<i>na</i>
M01N20HY	T157 (10)	na	na	na	na	33	na	na	na	12	na	na	na	na	34	na	6.9	na
M01N09HY	T157 (9)	na	na	na	na	33	na	na	na	12	na	na	na	na	34	na	6.9	na
M01N16HY	T157 (9)	na	na	na	na	33	na	na	na	11	na	na	na	na	33	na	6.7	na
A01O25HY	T157 (7)	na	na	2.5	na	na	na	1.01	132	na	na	na	61	na	na	na	na	na
A01N09HY	T157 (8)	na	na	2.7	na	na	na	1.09	137	na	na	na	65	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	SO ₄ mg/L	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L	Alkalinity meq/L
	<i>Hg7/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02807HY	Hg7/100 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02808HY	Hg7/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg15/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02807HY	Hg15/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02808HY	Hg15/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg22/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02807HY	Hg22/100 (9)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02808HY	Hg22/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg26/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02807HY	Hg26/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02808HY	Hg26/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M98</i>	<i>41.5</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01927HY	M98 (7)	41.2	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01928HY	M98 (4)	40.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01O02HY	M98 (3)	39.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M106</i>	<i>27.6</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01928HY	M106 (4)	28.4	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01O02HY	M106 (3)	27.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M110</i>	<i>64</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01927HY	M110 (7)	63.8	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M136</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>3.04</i>
B01N05HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.96
B01N07HY	M136 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.10
B01N14HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.78
B01N19HY	M136 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.77
B01N26HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.04
B01N28HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.06
	<i>M140</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>2.28</i>
B01N05HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.21
B01N07HY	M140 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.04
B01N14HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.09
B01N19HY	M140 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.08
B01N26HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.28
B01N28HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.28

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	SO ₄ mg/L	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L	Alkalinity meq/L
	<i>M142</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>3.60</i>
B01N05HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.53
B01N07HY	M142 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.62
B01N14HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.31
B01N19HY	M142 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.30
B01N26HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.61
B01N28HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.67
	<i>M144</i>	<i>210</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01928HY	M144 (4)	216	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01O02HY	M144 (4)	211	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M146</i>	<i>69.0</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01928HY	M146 (7)	68.3	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01O02HY	M146 (6)	69.0	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N62</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I01927HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01928HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01O02HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N68</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N01O03HY	N68 (5)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01927HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01928HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01O02HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N69</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N01926HY	N69 (11)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N01O03HY	N69 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N70</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N01926HY	N70 (12)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N01O03HY	N70 (11)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I01O02HY	N70 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>NIST1643d/10</i>	<i>na</i>	<i>5.41</i>	<i>1.143</i>	<i>na</i>	<i>na</i>	<i>29.48</i>	<i>na</i>	<i>0.728</i>	<i>na</i>	<i>na</i>	<i>3.51</i>	<i>na</i>	<i>na</i>	<i>7.248</i>	<i>na</i>
M01N16HY	NIST1643d/10 (10)	na	5.4	1.02	na	na	29	na	0.72	na	na	3.5	na	na	7.4	na
M01N09HY	NIST1643d/10 (9)	na	5.3	1.04	na	na	29	na	0.73	na	na	3.6	na	na	7.1	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	SO ₄ mg/L	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L	Alkalinity meq/L
	<i>PPREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.204</i>	<i>na</i>	<i>0.0367</i>	<i>na</i>	<i>0.0148</i>	<i>na</i>	<i>na</i>	<i>1.348</i>	<i>0.0818</i>	<i>na</i>	<i>na</i>
M01N09HY	PPREE/100 (6)	na	na	na	na	0.20	na	0.037	na	0.015	na	na	1.35	0.082	na	na
M01N16HY	PPREE/100 (6)	na	na	na	na	0.20	na	0.036	na	0.015	na	na	1.33	0.082	na	na
M01N20HY	PPREE/100 (6)	na	na	na	na	0.21	na	0.037	na	0.015	na	na	1.34	0.082	na	na
	<i>SCREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.0674</i>	<i>na</i>	<i>0.0134</i>	<i>na</i>	<i>0.00585</i>	<i>na</i>	<i>na</i>	<i>0.472</i>	<i>0.034</i>	<i>na</i>	<i>na</i>
M01N09HY	SCREE/100 (5)	na	na	na	na	0.073	na	0.014	na	0.0062	na	na	0.48	0.035	na	na
M01N16HY	SCREE/100 (5)	na	na	na	na	0.075	na	0.014	na	0.0063	na	na	0.48	0.035	na	na
M01N20HY	SCREE/100 (5)	na	na	na	na	0.069	na	0.014	na	0.0057	na	na	0.48	0.034	na	na
	<i>T131</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>5.8</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A01O25HY	T131 (7)	na	na	na	6.0	na	na	na	na	na	na	na	na	na	na	na
A01N09HY	T131 (8)	na	na	na	6.0	na	na	na	na	na	na	na	na	na	na	na
	<i>T135</i>	<i>na</i>	<i>76.3</i>	<i>10</i>	<i>na</i>	<i>na</i>	<i>46</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>52.8</i>	<i>na</i>	<i>na</i>	<i>48.2</i>	<i>na</i>
M01N09HY	T135 (10)	na	76	9.7	na	na	47	na	na	na	na	na	53	na	48	na
M01N16HY	T135 (10)	na	77	9.6	na	na	46	na	na	na	na	na	54	na	49	na
M01N20HY	T135 (11)	na	77	10.0	na	na	46	na	na	na	na	na	53	na	48	na
	<i>T137</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>6.96</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A01O25HY	T137 (8)	na	na	na	7.0	na	na	na	na	na	na	na	na	na	na	na
A01N09HY	T137 (9)	na	na	na	6.8	na	na	na	na	na	na	na	na	na	na	na
	<i>T143</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>23.4</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A01O25HY	T143 (8)	na	na	na	23	na	na	na	na	na	na	na	na	na	na	na
A01N09HY	T143 (9)	na	na	na	23	na	na	na	na	na	na	na	na	na	na	na
	<i>T147</i>	<i>na</i>	<i>10.5</i>	<i>10.1</i>	<i>na</i>	<i>na</i>	<i>313</i>	<i>na</i>	<i>20</i>	<i>na</i>	<i>3.21</i>	<i>15.2</i>	<i>na</i>	<i>na</i>	<i>14</i>	<i>na</i>
M01N09HY	T147 (10)	na	10.4	10.7	na	na	313	na	19	na	3.2	15	na	na	14	na
M01N16HY	T147 (10)	na	10.3	10.9	na	na	315	na	19	na	3.2	15	na	na	14	na
M01N20HY	T147 (11)	na	10.2	10.5	na	na	312	na	19	na	3.2	15	na	na	14	na
	<i>T149</i>	<i>na</i>	<i>21.1</i>	<i>2.1</i>	<i>na</i>	<i>na</i>	<i>331</i>	<i>na</i>	<i>31.4</i>	<i>na</i>	<i>2.71</i>	<i>31</i>	<i>na</i>	<i>na</i>	<i>5.8</i>	<i>na</i>
M01N16HY	T149 (18)	na	21	1.9	na	na	331	na	32	na	2.6	31	na	na	5.3	na
M01N09HY	T149 (19)	na	21	1.9	na	na	332	na	31	na	2.6	31	na	na	4.5	na
M01N20HY	T149 (19)	na	21	1.6	na	na	331	na	31	na	2.6	31	na	na	4.2	na
	<i>T151</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>1.43</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A01O25HY	T151 (8)	na	na	na	1.5	na	na	na	na	na	na	na	na	na	na	na
A01N09HY	T151 (9)	na	na	na	1.4	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A5. Quality control data for the September 2001 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	SO ₄ mg/L	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L	Alkalinity meq/L
	<i>T153</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>5.79</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A01O25HY	T153 (20)	na	na	na	5.8	na	na	na	na	na	na	na	na	na	na	na
A01N09HY	T153 (22)	na	na	na	5.8	na	na	na	na	na	na	na	na	na	na	na
	<i>T155</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>10.2</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A01O25HY	T155 (7)	na	na	na	8.2	na	na	na	na	na	na	na	na	na	na	na
A01N09HY	T155 (7)	na	na	na	10.1	na	na	na	na	na	na	na	na	na	na	na
	<i>T157</i>	<i>na</i>	<i>10.8</i>	<i>4.6</i>	<i>14.2</i>	<i>na</i>	<i>59.6</i>	<i>na</i>	<i>8.75</i>	<i>na</i>	<i>3.19</i>	<i>15.7</i>	<i>na</i>	<i>na</i>	<i>23.5</i>	<i>na</i>
M01N20HY	T157 (10)	na	10.7	4.1	na	na	60	na	8.6	na	3.3	16	na	na	23	na
M01N09HY	T157 (9)	na	10.6	4.1	na	na	59	na	8.6	na	3.2	16	na	na	23	na
M01N16HY	T157 (9)	na	10.6	4.0	na	na	58	na	8.5	na	3.2	15	na	na	23	na
A01O25HY	T157 (7)	na	na	na	14	na	na	na	na	na	na	na	na	na	na	na
A01N09HY	T157 (8)	na	na	na	15	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip.

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Ce µg/L	Cl mg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
	<i>Hg7/100</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02902HY	Hg7/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg15/100</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02902HY	Hg15/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg22/100</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02902HY	Hg22/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg26/100</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
H02902HY	Hg26/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M96</i>	na	na	na	na	na	na	na	na	38.6	na	na	na	na	na	na	na	na
I02419HY	M96 (2)	na	na	na	na	na	na	na	na	37.6	na	na	na	na	na	na	na	na
	<i>M98</i>	na	na	na	na	na	na	na	na	32.5	na	na	na	na	na	na	na	na
I02419HY	M98 (1)	na	na	na	na	na	na	na	na	34.1	na	na	na	na	na	na	na	na
	<i>M106</i>	na	na	na	na	na	na	na	na	13	na	na	na	na	na	na	na	na
I02419HY	M106 (1)	na	na	na	na	na	na	na	na	12.4	na	na	na	na	na	na	na	na
	<i>M130</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510HY	M130 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510H1	M130 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510H2	M130 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M136</i>	na	na	na	na	na	na	na	na	92	na	na	na	na	na	na	na	na
I02419HY	M136 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02422HY	M136 (2)	na	na	na	na	na	na	na	na	93	na	na	na	na	na	na	na	na
	<i>M138</i>	na	na	na	na	na	na	na	na	33.4	na	na	na	na	na	na	na	na
I02422HY	M138 (1)	na	na	na	na	na	na	na	na	35	na	na	na	na	na	na	na	na
	<i>M140</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510H1	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510H2	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M142</i>	na	na	na	na	na	na	na	na	132	na	na	na	na	na	na	na	na
I02422HY	M142 (1)	na	na	na	na	na	na	na	na	127	na	na	na	na	na	na	na	na
B02510HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510H1	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510H2	M142 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Ce µg/L	Cl mg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
	<i>M144</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>74</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	M144 (3)	na	na	na	na	na	na	na	na	75.8	na	na	na	na	na	na	na	na
I02422HY	M144 (3)	na	na	na	na	na	na	na	na	75	na	na	na	na	na	na	na	na
	<i>M146</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>46.1</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02422HY	M146 (2)	na	na	na	na	na	na	na	na	49	na	na	na	na	na	na	na	na
	<i>M148</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>46</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	M148 (1)	na	na	na	na	na	na	na	na	46.5	na	na	na	na	na	na	na	na
	<i>M150</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>17</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02422HY	M150 (1)	na	na	na	na	na	na	na	na	16.6	na	na	na	na	na	na	na	na
	<i>N60</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N02410HY	N60 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02419HY	N60 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N62</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N63</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02422HY	N63 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N64</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	N64 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N68</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N69</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N02410HY	N69 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N70</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
N02410HY	N70 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>NIST1643d/10</i>	<i>12.76</i>	<i>5.602</i>	<i>na</i>	<i>50.65</i>	<i>1.253</i>	<i>na</i>	<i>0.647</i>	<i>na</i>	<i>na</i>	<i>2.5</i>	<i>1.853</i>	<i>2.05</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
M02823HY	NIST1643d/10 (8)	12.2	5.4	na	51	1.20	na	0.43	na	na	2.4	1.9	2.1	na	na	na	na	na
	<i>PPREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>1.63</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.22</i>	<i>0.12</i>	<i>0.06</i>	<i>na</i>	<i>0.24</i>
M02823HY	PPREE/100 (5)	na	na	na	na	na	na	na	1.63	na	na	na	na	0.22	0.120	0.060	na	0.24
	<i>SCREE/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.246</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.0814</i>	<i>0.0437</i>	<i>0.0148</i>	<i>na</i>	<i>0.0829</i>
M02823HY	SCREE/100 (5)	na	na	na	na	na	na	na	0.24	na	na	na	na	0.082	0.044	0.015	na	0.085
	<i>T135</i>	<i>10.5</i>	<i>10</i>	<i>na</i>	<i>67.8</i>	<i>59</i>	<i>na</i>	<i>50.5</i>	<i>na</i>	<i>na</i>	<i>40</i>	<i>79</i>	<i>62</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
M02823HY	T135 (8)	11.2	10.6	na	69	59	na	51	na	na	40	79	62	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Ca mg/L	Cd µg/L	Ce µg/L	Cl mg/L	Co µg/L	Cr µg/L	Cu µg/L	Dy µg/L	Er µg/L	Eu µg/L	Fe µg/L	Gd µg/L
<i>T141</i>		<i>na</i>	<i>na</i>	29	<i>na</i>	<i>na</i>	19.1	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	4.3	<i>na</i>
A02D12HY	T141 (6)	na	na	29	na	na	19	na	na	na	na	na	na	na	na	na	3.2	na
A02D16HY	T141 (8)	na	na	29	na	na	19	na	na	na	na	na	na	na	na	na	4.1	na
<i>T143</i>		<i>na</i>	<i>na</i>	35	<i>na</i>	<i>na</i>	53.7	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	222	<i>na</i>
A02D12HY	T143 (6)	na	na	36	na	na	54	na	na	na	na	na	na	na	na	na	223	na
A02D16HY	T143 (8)	na	na	36	na	na	54	na	na	na	na	na	na	na	na	na	222	na
<i>T145</i>		67.6	9.88	<i>na</i>	37.1	9.04	<i>na</i>	9.33	<i>na</i>	<i>na</i>	10	15.3	11	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
M02823HY	T145 (8)	154	10.2	na	38	9.5	na	9.0	na	na	10.4	15	11.5	na	na	na	na	na
<i>T151</i>		<i>na</i>	<i>na</i>	36.3	<i>na</i>	<i>na</i>	37.9	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	10	<i>na</i>
A02D12HY	T151 (6)	na	na	36	na	na	38	na	na	na	na	na	na	na	na	na	11.1	na
A02D16HY	T151 (7)	na	na	38	na	na	38	na	na	na	na	na	na	na	na	na	7.7	na
<i>T153</i>		35	0.50	99.4	184	<i>na</i>	27.5	16	<i>na</i>	<i>na</i>	<i>na</i>	14.9	24	<i>na</i>	<i>na</i>	<i>na</i>	75	<i>na</i>
A02D12HY	T153 (6)	na	na	99	na	na	27	na	na	na	na	na	na	na	na	na	77	na
M02823HY	T153 (8)	35	0.29	na	186	na	na	16	na	na	na	15	24	na	na	na	na	na
A02D16HY	T153 (8)	na	na	99	na	na	27	na	na	na	na	na	na	na	na	na	76	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Hg ng/L	Ho µg/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
	<i>Hg7/100</i>	2.2	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02902HY	Hg7/100 (10)	2.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg15/100</i>	4.1	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02902HY	Hg15/100 (10)	3.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg22/100</i>	12.4	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02902HY	Hg22/100 (10)	11.9	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg26/100</i>	7.0	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02902HY	Hg26/100 (10)	6.7	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M96</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	M96 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M98</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	M98 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M106</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	M106 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M130</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B02510HY	M130 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510H1	M130 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510H2	M130 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M136</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	M136 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02422HY	M136 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M138</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02422HY	M138 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M140</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B02510HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510H1	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510H2	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M142</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02422HY	M142 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510H1	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510H2	M142 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Hg ng/L	Ho µg/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
	<i>M144</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	M144 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02422HY	M144 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M146</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02422HY	M146 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M148</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	M148 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M150</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02422HY	M150 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N60</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	0.578	0.73	na	na	na	na	na	na
N02410HY	N60 (1)	na	na	na	na	na	na	na	na	na	0.585	na	na	na	na	na	na	na
I02419HY	N60 (3)	na	na	na	na	na	na	na	na	na	na	0.74	na	na	na	na	na	na
	<i>N62</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	0.92	na	na	na	na	na	na
I02419HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	0.80	na	na	na	na	na	na
	<i>N63</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	0.84	na	na	na	na	na	na
I02422HY	N63 (1)	na	na	na	na	na	na	na	na	na	na	0.73	na	na	na	na	na	na
	<i>N64</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	1.26	na	na	na	na	na	na
I02419HY	N64 (1)	na	na	na	na	na	na	na	na	na	na	1.39	na	na	na	na	na	na
	<i>N68</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	1.68	na	na	na	na	na	na
I02419HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	1.64	na	na	na	na	na	na
	<i>N69</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	0.086	na	na	na	0.086	na	na	na
N02410HY	N69 (6)	na	na	na	na	na	na	na	na	na	0.079	na	na	na	na	0.089	na	na
	<i>N70</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	0.580	na	na	na	na	na	na	na
N02410HY	N70 (7)	na	na	na	na	na	na	na	na	na	0.567	na	na	na	na	na	na	na
	<i>NIST1643d/10</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>1.65</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>11.29</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>5.81</i>	<i>na</i>	<i>1.815</i>	<i>na</i>
M02823HY	NIST1643d/10 (8)	na	na	na	na	1.65	na	na	na	11.3	na	na	na	na	5.8	na	1.8	na
	<i>PPREE/100</i>	<i>na</i>	<i>0.0443</i>	<i>na</i>	<i>0.804</i>	<i>na</i>	<i>0.0111</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.934</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.212</i>
M02823HY	PPREE/100 (5)	na	0.044	na	0.80	na	0.0110	na	na	na	na	na	na	0.93	na	na	na	0.21
	<i>SCREE/100</i>	<i>na</i>	<i>0.0162</i>	<i>na</i>	<i>0.099</i>	<i>na</i>	<i>0.00453</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.222</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>0.0431</i>
M02823HY	SCREE/100 (5)	na	0.016	na	0.10	na	0.0047	na	na	na	na	na	na	0.23	na	na	na	0.044
	<i>T135</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>73.7</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>63</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>65.6</i>	<i>na</i>	<i>103</i>	<i>na</i>
M02823HY	T135 (8)	na	na	na	na	73	na	na	na	63	na	na	na	na	65	na	103	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	Hg ng/L	Ho µg/L	K mg/L	La µg/L	Li µg/L	Lu µg/L	Mg mg/L	Mn µg/L	Mo µg/L	NH ₄ mg N/L	NO ₃ mg N/L	Na mg/L	Nd µg/L	Ni µg/L	PO ₄ mg P/L	Pb µg/L	Pr µg/L
<i>T141</i>		<i>na</i>	<i>na</i>	2.32	<i>na</i>	<i>na</i>	<i>na</i>	5.48	20	<i>na</i>	<i>na</i>	<i>na</i>	33	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A02D12HY	T141 (6)	na	na	2.1	na	na	na	5.4	21	na	na	na	32	na	na	na	na	na
A02D16HY	T141 (8)	na	na	2.2	na	na	na	5.4	23	na	na	na	32	na	na	na	na	na
<i>T143</i>		<i>na</i>	<i>na</i>	2.5	<i>na</i>	<i>na</i>	<i>na</i>	10.4	18.2	<i>na</i>	<i>na</i>	<i>na</i>	34	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A02D12HY	T143 (6)	na	na	2.4	na	na	na	10.5	17	na	na	na	34	na	na	na	na	na
A02D16HY	T143 (8)	na	na	2.5	na	na	na	10.4	18	na	na	na	34	na	na	na	na	na
<i>T145</i>		<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	27.3	<i>na</i>	<i>na</i>	<i>na</i>	9.23	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	11	<i>na</i>	12.7	<i>na</i>
M02823HY	T145 (8)	na	na	na	na	28	na	na	na	8.9	na	na	na	na	11.8	na	13	na
<i>T151</i>		<i>na</i>	<i>na</i>	1.95	<i>na</i>	<i>na</i>	<i>na</i>	17.5	13	<i>na</i>	<i>na</i>	<i>na</i>	55	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A02D12HY	T151 (6)	na	na	2.0	na	na	na	18	13	na	na	na	56	na	na	na	na	na
A02D16HY	T151 (7)	na	na	2.1	na	na	na	18	13	na	na	na	56	na	na	na	na	na
<i>T153</i>		<i>na</i>	<i>na</i>	1.6	<i>na</i>	53.4	<i>na</i>	8.72	74.5	154	<i>na</i>	<i>na</i>	28.7	<i>na</i>	32.2	<i>na</i>	46.2	<i>na</i>
A02D12HY	T153 (6)	na	na	1.5	na	na	na	8.6	71	na	na	na	28	na	na	na	na	na
M02823HY	T153 (8)	na	na	na	na	54	na	na	na	154	na	na	na	na	33	na	46	na
A02D16HY	T153 (8)	na	na	1.5	na	na	na	8.5	74	na	na	na	28	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	SO ₄ mg/L	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L	Alkalinity meq/L
	<i>Hg7/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02902HY	Hg7/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg15/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02902HY	Hg15/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg22/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02902HY	Hg22/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>Hg26/100</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
H02902HY	Hg26/100 (10)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M96</i>	<i>139</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	M96 (2)	140	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M98</i>	<i>41.5</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	M98 (1)	41.6	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M106</i>	<i>27.6</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	M106 (1)	30.5	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M130</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B02510HY	M130 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.20
B02510H1	M130 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.08
B02510H2	M130 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1.09
	<i>M136</i>	<i>150</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02419HY	M136 (1)	152	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02422HY	M136 (2)	150	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M138</i>	<i>28</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02422HY	M138 (1)	29	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M140</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
B02510HY	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.28
B02510H1	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.20
B02510H2	M140 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	2.21
	<i>M142</i>	<i>231</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
I02422HY	M142 (1)	235	na	na	na	na	na	na	na	na	na	na	na	na	na	3.60
B02510HY	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
B02510H1	M142 (2)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.58
B02510H2	M142 (4)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	3.66
																3.59

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	SO ₄ mg/L	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L	Alkalinity meq/L
	<i>M144</i>	210	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02419HY	M144 (3)	209	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02422HY	M144 (3)	205	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M146</i>	69	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02422HY	M146 (2)	66	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M148</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02419HY	M148 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>M150</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02422HY	M150 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N60</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N02410HY	N60 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02419HY	N60 (3)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N62</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02419HY	N62 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N63</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02422HY	N63 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N64</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02419HY	N64 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N68</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
I02419HY	N68 (1)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N69</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N02410HY	N69 (6)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>N70</i>	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
N02410HY	N70 (7)	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na
	<i>NIST1643d/10</i>	na	5.41	1.143	na	na	29.48	na	0.728	na	na	3.51	na	na	7.248	na
M02823HY	NIST1643d/10 (8)	na	5.4	1.10	na	na	29	na	0.74	na	na	3.5	na	na	7.1	na
	<i>PPREE/100</i>	na	na	na	na	0.204	na	0.0367	na	0.0148	na	na	1.348	0.0818	na	na
M02823HY	PPREE/100 (5)	na	na	na	na	0.20	na	0.036	na	0.015	na	na	1.35	0.082	na	na
	<i>SCREE/100</i>	na	na	na	na	0.0674	na	0.0134	na	0.00585	na	na	0.472	0.034	na	na
M02823HY	SCREE/100 (5)	na	na	na	na	0.069	na	0.014	na	0.0059	na	na	0.46	0.033	na	na
	<i>T135</i>	na	76.3	10	na	na	46	na	na	na	na	52.8	na	na	48.2	na
M02823HY	T135 (8)	na	77	10.1	na	na	47	na	na	na	na	53	na	na	49	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A6. Quality control data for the April 2002 trip -- continued

[Values in italics are MPVs for the listed standard; non-italicized values are the median concentrations from each analysis run; µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; na, not applicable]

Analysis Run	Standard ¹	SO ₄ mg/L	Sb µg/L	Se µg/L	SiO ₂ mg/L	Sm µg/L	Sr µg/L	Tb µg/L	Tl µg/L	Tm µg/L	U µg/L	V µg/L	Y µg/L	Yb µg/L	Zn µg/L	Alkalinity meq/L
<i>T141</i>		<i>na</i>	<i>na</i>	<i>na</i>	8.7	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A02D12HY	T141 (6)	na	na	na	9.0	na	na	na	na	na	na	na	na	na	na	na
A02D16HY	T141 (8)	na	na	na	9.1	na	na	na	na	na	na	na	na	na	na	na
<i>T143</i>		<i>na</i>	<i>na</i>	<i>na</i>	23.4	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A02D12HY	T143 (6)	na	na	na	23	na	na	na	na	na	na	na	na	na	na	na
A02D16HY	T143 (8)	na	na	na	23	na	na	na	na	na	na	na	na	na	na	na
<i>T145</i>		<i>na</i>	8.8	10.1	<i>na</i>	<i>na</i>	203	<i>na</i>	15.3	<i>na</i>	1.1	11.7	<i>na</i>	<i>na</i>	10	<i>na</i>
M02823HY	T145 (8)	na	8.6	10.2	na	na	204	na	16	na	1.2	11.9	na	na	9.9	na
<i>T151</i>		<i>na</i>	<i>na</i>	<i>na</i>	1.43	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>
A02D12HY	T151 (6)	na	na	na	1.4	na	na	na	na	na	na	na	na	na	na	na
A02D16HY	T151 (7)	na	na	na	1.5	na	na	na	na	na	na	na	na	na	na	na
<i>T153</i>		<i>na</i>	25.7	9	5.79	<i>na</i>	311	<i>na</i>	20.4	<i>na</i>	6.9	19	<i>na</i>	<i>na</i>	72.6	<i>na</i>
A02D12HY	T153 (6)	na	na	na	5.8	na	na	na	na	na	na	na	na	na	na	na
M02823HY	T153 (8)	na	26	8.7	na	na	309	na	20	na	7.5	19	na	na	72	na
A02D16HY	T153 (8)	na	na	na	5.8	na	na	na	na	na	na	na	na	na	na	na

¹Numbers in parentheses represent the number of times the standard was analyzed during the analysis run.

Table A7. Field blank data collected during the study.

[µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	Al		As		B		Ba		Be		Bi		Ca	
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
BLANKS JUNE 1999														
DI System	< 0.07	0.05	< 0.05	0.02	< 0.8	0.7	0.01	0.01	< 0.02	0.03	< 0.0004	0.0002	< 0.005	0.000
Churn Blank	3.4	0.1	< 0.05	0.01	< 0.8	0.5	0.16	0.00	0.02	0.03	0.0041	0.0019	0.16	0.00
Filter Blank	0.10	0.07	< 0.05	0.01	< 0.8	0.4	0.03	0.00	< 0.02	0.01	0.0025	0.0016	0.01	0.01
BLANKS SEPTEMBER 1999														
DI System	< 0.1	0.0	< 0.01	0.01	4	3	< 0.007	0.004	< 0.005	0.004	< 0.002	0.000	0.13	0.12
Store-bought "DI" water	0.3	0.0	< 0.01	0.01	< 2	2	0.12	0.01	< 0.005	0.004	< 0.002	0.004	0.03	0.03
Churn Blank	0.8	0.0	0.03	0.01	5	3	2.1	0.1	0.005	0.002	< 0.002	0.002	1.7	0.0
Filter (only) blank	< 0.1	0.0	< 0.01	0.01	9	1	< 0.007	0.003	< 0.005	0.004	< 0.002	0.000	0.17	0.17
Process Blank	< 0.1	0.1	< 0.01	0.00	< 2	2	< 0.007	0.003	< 0.005	0.002	< 0.002	0.002	0.03	0.04
BLANKS MAY 2000														
DI System	< 0.5	0.1	< 0.03	0.04	2	1	< 0.02	0.01	< 0.004	0.003	0.0023	0.0014	< 0.02	0.01
Holding Bottle Blank	3.3	0.1	< 0.03	0.03	3	1	0.16	0.01	< 0.004	0.006	0.0013	0.0011	0.06	0.01
Churn Blank	3.6	0.2	< 0.03	0.02	3	2	0.12	0.00	< 0.004	0.001	0.0025	0.0012	0.06	0.01
Filter (only) blank	< 0.5	0.2	< 0.03	0.06	2	0	0.03	0.02	< 0.004	0.001	0.0058	0.0066	< 0.02	0.02
Process Blank	0.8	0.9	< 0.03	0.02	4	1	0.10	0.06	< 0.004	0.004	0.0039	0.0006	0.07	0.02

Table A7. Field blank data collected during the study – continued

[µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	Cd		Ce		Cl		Co		Cr		Cs		Cu		DOC	
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
BLANKS JUNE 1999																
DI System	0.003	0.003	< 0.0003	0.0002	< 0.1	0.007	0.007	0.001	< 0.2	0.1	< 0.002	0.0010	< 0.03	0.02	0.12	0.06
Churn Blank	0.029	0.003	0.0070	0.0002	< 0.1	0.018	0.010	< 0.2	0.1	< 0.002	0.0015	0.11	0.02	0.02	0.24	0.02
Filter Blank	0.005	0.001	0.0004	0.0002	< 0.1	0.011	0.003	< 0.2	0.0	0.0019	0.0012	0.24	0.01	0.01	0.25	0.04
BLANKS SEPTEMBER 1999																
DI System	< 0.002	0.000	< 0.0002	0.0002	< 1	0.0009	0.0009	< 0.1	0.0	< 0.0009	0.0004	< 0.04	0.01	0.01	0.5	0.0
Store-bought "DI" water	< 0.002	0.000	< 0.0002	0.0002	< 1	0.011	0.000	< 0.1	0.0	0.0013	0.0005	91	2	0.5	0.0	0.0
Churn Blank	0.003	0.001	0.0012	0.0002	2.4	0.012	0.000	0.4	0.0	< 0.0009	0.0002	86	0	0.7	0.0	0.0
Filter (only) blank	< 0.002	0.003	< 0.0002	0.0002	< 1	0.0018	0.0007	< 0.1	0.0	< 0.0009	0.0000	< 0.04	0.01	0.01	0.7	0.0
Process Blank	0.005	0.001	< 0.0002	0.0001	< 1	0.0010	0.0003	< 0.1	0.0	< 0.0009	0.0004	0.10	0.00	0.00	0.4	0.1
BLANKS MAY 2000																
DI System	< 0.002	0.001	0.0008	0.0003	< 0.2	0.004	0.000	< 0.1	0.1	< 0.009	0.004	< 0.02	0.00	0.00	0.27	0.08
Holding Bottle Blank	< 0.002	0.001	0.0069	0.0003	< 0.2	0.008	0.006	< 0.1	0.0	< 0.009	0.003	0.04	0.02	0.02	0.80	0.38
Churn Blank	0.004	0.004	0.0068	0.0002	< 0.2	0.007	0.001	< 0.1	0.1	< 0.009	0.006	0.04	0.02	0.02	0.28	0.05
Filter (only) blank	0.002	0.003	< 0.0004	0.0001	2.4	0.007	0.001	< 0.1	0.0	< 0.009	0.003	0.03	0.02	0.02	0.62	0.02
Process Blank	0.005	0.003	0.0027	0.0011	< 0.2	0.009	0.001	< 0.1	0.0	1.080	0.034	0.20	0.07	0.07	0.38	0.04

Table A7. Field blank data collected during the study – continued

[µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	Dy		Er		Eu		Fe		Gd		Hg		Ho		K	
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
BLANKS JUNE 1999																
DI System	<0.0005	0.0002	<0.0006	0.0004	<0.0004	0.0002	0.1	0.1	<0.0005	0.0003	na	na	<0.0002	0.0000	<0.002	0.000
Churn Blank	<0.0005	0.0003	<0.0006	0.0002	<0.0004	0.0003	4.1	0.4	<0.0005	0.0002	na	na	<0.0002	0.0000	0.013	0.009
Filter Blank	<0.0005	0.0005	<0.0006	0.0009	<0.0004	0.0001	0.15	0.07	<0.0005	0.0002	na	na	<0.0002	0.0001	<0.003	0.004
BLANKS SEPTEMBER 1999																
DI System	<0.0006	0.0001	<0.0007	0.0002	<0.0002	0.0001	<0.7	0.0	<0.0004	0.0002	<0.3	0.3	<0.0001	0.0001	0.009	0.011
Store-bought "DI" water	<0.0006	0.0001	<0.0007	0.0002	<0.0002	0.0000	1.1	0.5	<0.0004	0.0000	<0.3	0.1	<0.0001	0.0000	<0.006	0.005
Churn Blank	<0.0006	0.0001	<0.0007	0.0001	<0.0002	0.0001	2.1	0.9	<0.0004	0.0001	<0.3	0.2	<0.0001	0.0000	0.096	0.005
Filter (only) blank	<0.0006	0.0001	<0.0007	0.0003	<0.0002	0.0001	1.0	1.2	<0.0004	0.0003	<0.3	0.1	<0.0001	0.0000	0.007	0.009
Process Blank	<0.0006	0.0004	<0.0007	0.0004	<0.0002	0.0002	<0.7	0.5	<0.0004	0.0002	0.3	0.1	<0.0001	0.0000	<0.006	0.006
BLANKS MAY 2000																
DI System	<0.0006	0.0002	<0.0006	0.0001	<0.0003	0.0001	<0.3	0.2	<0.0005	0.0003	<0.5	0.0	<0.0001	0.0001	<0.003	0.004
Holding Bottle Blank	<0.0006	0.0002	<0.0006	0.0002	<0.0003	0.0001	5.8	2.6	0.0009	0.0005	<0.5	0.2	<0.0001	0.0001	<0.003	0.003
Churn Blank	<0.0006	0.0003	<0.0006	0.0003	<0.0003	0.0002	4.9	1.8	0.0005	0.0001	<0.4	0.1	0.0001	0.0000	<0.003	0.003
Filter (only) blank	<0.0006	0.0004	<0.0006	0.0001	<0.0003	0.0001	<0.3	1.1	<0.0005	0.0004	<0.5	0.1	<0.0001	0.0000	<0.003	0.001
Process Blank	<0.0006	0.0002	<0.0006	0.0003	<0.0003	0.0001	0.6	0.9	<0.0005	0.0004	<0.5	0.2	<0.0001	0.0000	0.012	0.011

Table A7. Field blank data collected during the study – continued

[µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	La µg/L		Li µg/L		Lu µg/L		Mg mg/L		Mn µg/L		Mo µg/L		NH ₄ mg N/L		NO ₂ mg N/L	
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
BLANKS JUNE 1999																
DI System	< 0.0002	0.0001	< 0.01	0.02	< 0.0001	0.0001	< 0.002	0.001	< 0.04	0.00	0.07	0.08	0.005	0.002	< 0.001	0.000
Churn Blank	0.0035	0.0002	< 0.01	0.01	< 0.0001	0.0001	0.012	0.001	0.38	0.03	0.06	0.07	< 0.002	0.001	< 0.001	0.000
Filter Blank	< 0.0002	0.0001	< 0.01	0.01	< 0.0001	0.0000	< 0.004	0.002	0.14	0.01	< 0.01	0.00	< 0.002	0.002	< 0.001	0.000
BLANKS SEPTEMBER 1999																
DI System	< 0.0004	0.0001	0.004	0.008	< 0.0002	0.0000	0.06	0.06	< 0.002	0.005	< 0.04	0.00	< 0.007	0.000	< 0.001	0.001
Store-bought "DI" water	< 0.0004	0.0000	< 0.004	0.002	< 0.0002	0.0000	< 0.02	0.00	0.56	0.04	< 0.04	0.01	< 0.007	0.000	< 0.001	0.001
Churn Blank	0.0005	0.0001	0.41	0.01	< 0.0002	0.0001	0.62	0.00	1.0	0.0	0.30	0.02	< 0.007	0.001	0.024	0.033
Filter (only) blank	< 0.0004	0.0001	< 0.004	0.001	< 0.0002	0.0001	0.02	0.03	0.003	0.004	< 0.04	0.02	< 0.007	0.002	< 0.001	0.000
Process Blank	< 0.0004	0.0002	0.005	0.001	< 0.0002	0.0000	< 0.02	0.02	0.045	0.018	< 0.04	0.01	< 0.007	0.000	< 0.001	0.001
BLANKS MAY 2000																
DI System	< 0.0004	0.0002	< 0.01	0.00	< 0.0001	0.0000	< 0.008	0.013	< 0.06	0.04	< 0.01	0.02	< 0.007	0.004	< 0.002	0.002
Holding Bottle Blank	0.0032	0.0006	0.02	0.02	< 0.0001	0.0001	< 0.008	0.006	0.37	0.06	< 0.01	0.02	< 0.007	0.007	< 0.002	0.001
Churn Blank	0.0031	0.0002	0.02	0.02	< 0.0001	0.0000	0.010	0.010	0.34	0.14	0.02	0.03	< 0.007	0.005	< 0.002	0.000
Filter (only) blank	< 0.0004	0.0001	0.02	0.01	< 0.0001	0.0001	< 0.008	0.008	< 0.06	0.11	0.07	0.06	< 0.007	0.010	< 0.002	0.001
Process Blank	0.0018	0.0008	< 0.01	0.01	< 0.0001	0.0002	0.027	0.024	< 0.06	0.11	0.03	0.02	< 0.007	0.005	< 0.002	0.000

Table A7. Field blank data collected during the study – continued

[µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	NO ₃ mg N/L		Na mg/L		Nd µg/L		Ni µg/L		P µg/L		PO ₄ mg P/L		Pb µg/L		Pr µg/L	
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
BLANKS JUNE 1999																
DI System	< 0.05	0.09	< 0.04	0.00	< 0.0009	0.0011	< 0.01	0.01	< 3	1	< 0.02	0.01	0.003	0.004	< 0.0001	0.0001
Churn Blank	< 0.05	0.07	0.05	0.05	0.0036	0.0003	0.09	0.01	< 2	1	< 0.02	0.00	0.020	0.008	0.0011	0.0001
Filter Blank	< 0.05	0.02	< 0.04	0.02	< 0.0009	0.0003	0.08	0.01	< 2	1	< 0.02	0.00	0.007	0.002	< 0.0001	0.0001
BLANKS SEPTEMBER 1999																
DI System	< 0.02	0.00	< 0.02	0.04	< 0.0006	0.0007	0.004	0.003	< 13	7	< 0.02	0.00	< 0.004	0.000	< 0.0001	0.0002
Store-bought "DI" water	0.03	0.00	0.03	0.02	< 0.0006	0.0007	10	0	< 13	2	< 0.02	0.00	0.14	0.00	< 0.0001	0.0002
Churn Blank	0.07	0.01	1.0	0.2	0.0010	0.0003	11	0	< 13	4	< 0.02	0.00	0.15	0.00	0.0002	0.0001
Filter (only) blank	< 0.02	na	0.07	0.06	< 0.0006	0.0005	0.015	0.006	< 13	8	< 0.02	0.00	0.004	0.002	0.0002	0.0002
Process Blank	< 0.02	0.01	< 0.02	0.00	< 0.0006	0.0002	0.013	0.003	< 13	3	< 0.02	0.00	0.008	0.004	0.0002	0.0002
BLANKS MAY 2000																
DI System	0.055	0.098	0.007	0.005	< 0.0007	0.0003	< 0.4	0.5	< 2	2	< 0.006	0.004	0.006	0.002	< 0.0002	0.0000
Holding Bottle Blank	0.024	0.052	0.018	0.003	0.0044	0.0007	< 0.4	0.3	< 2	2	< 0.006	0.001	0.008	0.005	0.0009	0.0002
Churn Blank	< 0.007	0.010	0.017	0.001	0.0030	0.0004	< 0.4	0.1	< 2	1	< 0.006	0.000	0.015	0.007	0.0010	0.0002
Filter (only) blank	0.016	0.011	0.015	0.010	< 0.0007	0.0005	< 0.4	0.3	7	3	< 0.006	0.002	0.025	0.002	< 0.0002	0.0000
Process Blank	< 0.007	0.016	0.035	0.015	0.0015	0.0011	< 0.4	0.3	< 2	7	< 0.006	0.000	0.036	0.011	0.0002	0.0000

Table A7. Field blank data collected during the study – continued

[µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	Rb μg/L		Re μg/L		SO ₄ mg/L		Sb μg/L		Se μg/L		SiO ₂ mg/L		Sm μg/L		Sr μg/L	
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
BLANKS JUNE 1999																
DI System	< 0.002	0.002	< 0.0002	0.0000	< 0.1	0.006	0.005	< 0.3	0.19	< 0.02	0.01	< 0.0007	0.0006	< 0.06	0.03	
Churn Blank	0.012	0.001	< 0.0002	0.0001	0.1	0.008	0.007	< 0.3	0.23	< 0.02	0.03	< 0.0007	0.0006	0.33	0.04	
Filter Blank	0.002	0.000	< 0.0002	0.0001	< 0.1	0.003	0.001	< 0.3	0.13	< 0.02	0.02	0.0007	0.0005	0.07	0.03	
BLANKS SEPTEMBER 1999																
DI System	< 0.0005	0.0002	< 0.0003	0.0001	< 2	0.0028	0.0019	< 0.05	0.06	< 0.02	0.01	< 0.0007	0.0001	< 0.01	0.02	
Store-bought "DI" water	0.0008	0.0001	< 0.0003	0.0001	< 2	0.0065	0.0001	< 0.05	0.10	< 0.02	0.01	< 0.0007	0.0000	0.11	0.02	
Churn Blank	0.10	0.00	0.0011	0.0001	5.3	0.023	0.001	< 0.05	0.07	0.09	0.03	< 0.0007	0.0003	12	0	
Filter (only) blank	0.0009	0.0006	< 0.0003	0.0000	2.9	0.0035	0.0011	< 0.05	0.05	0.08	0.04	< 0.0007	0.0002	< 0.01	0.01	
Process Blank	0.0005	0.0004	< 0.0003	0.0001	< 2	0.0012	0.0002	< 0.05	0.04	< 0.02	0.02	< 0.0007	0.0004	< 0.01	0.01	
BLANKS MAY 2000																
DI System	< 0.001	0.001	< 0.0003	0.0001	< 0.5	0.003	0.002	< 0.1	0.0	< 0.02	0.01	< 0.0009	0.0003	< 0.06	0.03	
Holding Bottle Blank	0.014	0.001	< 0.0003	0.0000	< 0.5	0.002	0.004	< 0.1	0.1	< 0.02	0.03	< 0.0009	0.0001	0.34	0.01	
Churn Blank	0.013	0.001	< 0.0003	0.0001	< 0.5	0.003	0.003	< 0.1	0.0	< 0.02	0.02	< 0.0009	0.0002	0.27	0.01	
Filter (only) blank	0.001	0.001	< 0.0003	0.0002	< 0.5	0.008	0.007	< 0.1	0.1	< 0.02	0.01	< 0.0009	0.0002	< 0.06	0.03	
Process Blank	0.009	0.005	< 0.0003	0.0001	< 0.5	0.007	0.003	< 0.1	0.0	< 0.02	0.02	< 0.0009	0.0005	0.23	0.06	

Table A7. Field blank data collected during the study – continued

[µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	Ta		Tb		Te		Th		Ti		Tl		Tm	
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
BLANKS JUNE 1999														
DI System	< 0.001	0.001	< 0.0002	0.0000	< 0.01	0.002	0.0003	0.0004	0.2	0.1	< 0.002	0.001	< 0.0002	0.0000
Churn Blank	0.004	0.000	< 0.0002	0.0001	< 0.01	0.006	0.0016	0.0000	0.6	0.2	< 0.002	0.000	< 0.0002	0.0000
Filter Blank	< 0.001	0.001	< 0.0002	0.0001	< 0.01	0.003	0.0003	0.0001	< 0.1	0.1	0.002	0.001	< 0.0002	0.0001
BLANKS SEPTEMBER 1999														
DI System	< 0.001	0.001	< 0.0002	0.0001	< 0.01	0.003	< 0.0002	0.0004	< 0.06	0.02	< 0.0002	0.0003	< 0.0001	0.0001
Store-bought "DI" water	< 0.001	0.000	< 0.0002	0.0000	< 0.01	0.001	< 0.0002	0.0002	< 0.06	0.01	0.0017	0.0012	< 0.0001	0.0001
Churn Blank	< 0.001	0.000	< 0.0002	0.0000	< 0.01	0.002	0.0003	0.0002	< 0.06	0.04	0.0019	0.0009	< 0.0001	0.0000
Filter (only) blank	< 0.001	0.000	< 0.0002	0.0001	< 0.01	0.002	< 0.0002	0.0002	< 0.06	0.01	< 0.0002	0.0005	< 0.0001	0.0000
Process Blank	< 0.001	0.000	< 0.0002	0.0000	< 0.01	0.002	< 0.0002	0.0001	< 0.06	0.01	< 0.0002	0.0003	< 0.0001	0.0000
BLANKS MAY 2000														
DI System	< 0.005	0.004	< 0.0001	0.0001	< 0.01	0.005	< 0.0001	0.0001	< 0.1	0.1	0.0025	0.0031	< 0.0002	0.0000
Holding Bottle Blank	< 0.005	0.005	< 0.0001	0.0001	< 0.01	0.004	0.0002	0.0002	< 0.1	0.0	0.0023	0.0014	< 0.0002	0.0000
Churn Blank	0.006	0.011	0.0001	0.0001	< 0.01	0.011	< 0.0001	0.0000	< 0.1	0.0	0.0026	0.0042	< 0.0002	0.0001
Filter (only) blank	< 0.005	0.006	< 0.0001	0.0000	< 0.01	0.004	0.0006	0.0007	< 0.1	0.1	0.0019	0.0041	< 0.0002	0.0000
Process Blank	< 0.005	0.006	< 0.0001	0.0001	< 0.01	0.001	0.0001	0.0000	< 0.1	0.2	0.0032	0.0021	< 0.0002	0.0000

Table A7. Field blank data collected during the study – continued

[µg/L, micrograms per liter; mg/L, milligrams per liter; ng/L, nanograms per liter; mg C/L, milligrams per liter as carbon; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; meq/L, milliequivalents per liter; Avg, average; SD, standard deviation; DI, deionized; na, not applicable]

Sample	U		V		W		Y		Yb		Zn		Zr		Alkalinity	
	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	meq/L	Value
BLANKS JUNE 1999																
DI System	0.0012	0.0015	0.20	0.11	0.004	0.002	< 0.0003	0.0001	< 0.0005	0.0002	0.07	0.03	< 0.001	0.001	na	na
Churn Blank	0.0010	0.0002	< 0.2	0.06	0.006	0.002	0.0016	0.0002	< 0.0005	0.0003	1.92	0.09	0.004	0.002	na	na
Filter Blank	< 0.0007	0.0003	< 0.2	0.03	< 0.002	0.001	0.0003	0.0002	< 0.0005	0.0001	0.33	0.02	0.002	0.000	na	na
BLANKS SEPTEMBER 1999																
DI System	< 0.0005	0.0000	< 0.1	0.02	< 0.001	0.001	< 0.0001	0.0001	< 0.0004	0.0001	1.2	0.0	< 0.0008	0.0005	na	na
Store-bought "DI" water	< 0.0005	0.0000	< 0.1	0.02	< 0.001	0.000	< 0.0001	0.0001	< 0.0004	0.0001	1.9	0.1	< 0.0008	0.0014	na	na
Churn Blank	< 0.0005	0.0003	< 0.1	0.03	0.004	0.001	0.0013	0.0000	< 0.0004	0.0002	2.3	0.1	< 0.0008	0.0003	na	na
Filter (only) blank	< 0.0005	0.0004	< 0.1	0.02	< 0.001	0.000	< 0.0001	0.0001	< 0.0004	0.0004	0.87	0.07	0.0009	0.0006	na	na
Process Blank	< 0.0005	0.0001	< 0.1	0.04	< 0.001	0.000	< 0.0001	0.0000	< 0.0004	0.0005	2.0	0.1	< 0.0008	0.0004	na	na
BLANKS MAY 2000																
DI System	< 0.005	0.001	< 0.05	0.05	< 0.002	0.001	< 0.0007	0.0001	< 0.0003	0.0002	0.15	0.02	< 0.001	0.001	0.0443	0.0443
Holding Bottle Blank	< 0.005	0.001	< 0.05	0.07	0.003	0.000	0.0020	0.0001	< 0.0003	0.0003	0.13	0.09	< 0.001	0.001	0.0503	0.0503
Churn Blank	< 0.005	0.001	< 0.05	0.03	0.002	0.001	0.0022	0.0004	< 0.0003	0.0003	0.17	0.15	< 0.001	0.001	0.0515	0.0515
Filter (only) blank	< 0.005	0.004	0.10	0.12	0.003	0.001	< 0.0007	0.0003	< 0.0003	0.0003	0.18	0.10	< 0.001	0.001	0.0627	0.0627
Process Blank	< 0.005	0.001	< 0.05	0.08	0.003	0.001	0.0014	0.0006	< 0.0003	0.0001	0.90	0.61	0.002	0.003	0.0496	0.0496

Table A8. Concentrations of nutrients and dissolved organic carbon (DOC) in grab samples collected on the synoptic trip of April 20, 1999.

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; mg/L, milligrams per liter; Avg, average, SD, standard deviation]

Site Name ¹	Site Location ¹	Time	Dist. ¹ km	Q cms	NO ₃ mg N/L Avg SD	NO ₂ mg N/L Avg SD	NH ₄ mg N/L Avg SD	PO ₄ mg P/L Avg SD	P mg/L Avg SD	DOC mg C/L Avg SD
IROQUOIS RIVER										
IR01	Highway 55 gage, Ind.	14:50	0.0	36	10.8 0.01	0.049 0.000	0.073 0.000	0.11 0.01	0.037 0.003	5.9 0.1
IR03	Brook, Ind.	14:30	5.9	48*	10.9 0.29	0.049 0.000	0.054 0.001	0.06 0.01	0.045 0.002	6.0 0.1
IR05	100 W bridge, Ind.	14:10	12.0	51*	11.9 0.10	0.050 0.000	0.066 0.005	0.08 0.01	0.049 0.002	5.9 0.1
	Newton Co.									
IR07	Fairgrounds, Ind.	13:55	21.1	62*	12.1 0.01	0.052 0.000	0.068 0.002	0.09 0.01	0.055 0.005	6.0 0.1
IR08	Iroquois, Ill.	13:00	33.1	75	13.1 0.17	0.051 0.000	0.083 0.003	0.09 0.01	0.067 0.003	5.7 0.1
SUGAR CREEK										
SC03	Highway 71, Ind.	16:25	9.8	na	12.8 0.10	0.022 0.000	0.032 0.002	0.06 0.00	0.034 0.004	2.4 0.2
SC08	2440 E Rd., Ill.	17:00	29.9	na	13.4 0.04	0.019 0.000	0.025 0.001	0.05 0.00	0.031 0.004	2.2 0.1

* These values are estimates

¹ More complete explanations of these are found in tables 1 and 2

Table A10. Concentrations of trace elements in grab samples collected on the synoptic trip of April 20, 1999.

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

ID ¹	Site ¹	Time	Dist. ¹ km	Q cms	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Bi µg/L	Cd µg/L								
					Avg	SD	Avg	SD	Avg	SD	Avg	SD							
IROQUOIS RIVER																			
IR01	Highway 55 gage, Ind.	14:50	0.0	36	4	0	0.58	0.02	31	4	46	0	<0.007	0.004	0.004	0.004	0.005	0.005	0.002
IR03	Brook, Ind.	14:30	5.9	48 [*]	53	1	0.62	0.01	33	4	46	1	0.014	0.005	0.013	0.009	0.012	0.012	0.001
IR05	100 W bridge, Ind.	14:10	12.0	51 [*]	5	0	0.59	0.02	33	4	45	1	<0.007	0.002	0.007	0.001	0.012	0.012	0.003
IR07	Newton Co. Fairgrounds, Ind.	13:55	21.1	62 [*]	28	1	0.58	0.02	29	2	43	1	<0.007	0.007	0.024	0.017	0.012	0.012	0.003
IR08	Iroquois, Ill.	13:00	33.1	75	24	1	0.61	0.03	32	4	42	2	0.011	0.007	0.006	0.006	0.024	0.024	0.000
SUGAR CREEK																			
SC03	Highway 71, Ind.	16:25	9.8	na	13	1	0.42	0.02	27	3	39	0	<0.007	0.005	0.005	0.003	0.008	0.008	0.004
SC08	2440 E Rd., Ill.	17:00	29.9	na	8	1	0.42	0.01	27	2	34	1	<0.007	0.004	0.004	0.002	0.007	0.007	0.001

* These values are estimates

¹ More complete explanations of these are found in tables 1 and 2

Table A10. Concentrations of trace elements in grab samples collected on the synoptic trip of April 20, 1999 -- continued

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

ID ¹	Site ¹	Time	Dist. ¹ km	Q cms	Ce µg/L		Co µg/L		Cr µg/L		Cs µg/L		Cu µg/L		Dy µg/L	
IROQUOIS RIVER																
IR01	Highway 55 gage, Ind.	14:50	0.0	36	0.018	0.001	0.020	0.028	<0.2	0.1	0.002	0.001	1.2	0.0	0.0057	0.0009
IR03	Brook, Ind.	14:30	5.9	48 [*]	0.080	0.002	0.047	0.019	<0.2	0.0	0.004	0.001	1.2	0.0	0.011	0.001
IR05	100 W bridge, Ind.	14:10	12.0	51 [*]	0.024	0.002	0.024	0.016	<0.2	0.1	0.003	0.001	1.2	0.0	0.0064	0.0005
IR07	Newton Co. Fairgrounds, Ind.	13:55	21.1	62 [*]	0.045	0.004	0.048	0.001	<0.2	0.1	0.003	0.001	1.3	0.0	0.0081	0.0003
IR08	Iroquois, Ill.	13:00	33.1	75	0.044	0.001	0.016	0.017	<0.2	0.1	0.005	0.001	1.4	0.0	0.0091	0.0017
SUGAR CREEK																
SC03	Highway 71, Ind.	16:25	9.8	na	0.034	0.003	<0.002	0.019	<0.2	0.1	<0.002	0.001	0.8	0.0	0.0051	0.0004
SC08	2440 E Rd., Ill.	17:00	29.9	na	0.021	0.001	<0.002	0.007	<0.2	0.1	0.009	0.000	0.9	0.1	0.0040	0.0003

* These values are estimates

¹ More complete explanations of these are found in tables 1 and 2

Table A10. Concentrations of trace elements in grab samples collected on the synoptic trip of April 20, 1999 -- continued

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

ID ¹	Site ¹	Time	Dist. ¹ km	Q cms	Er µg/L	Avg	SD	Eu µg/L	Avg	SD	Fe µg/L	Avg	SD	Gd µg/L	Avg	SD	Hg ng/L	Avg	SD	Ho µg/L	Avg	SD	La µg/L	Avg	SD
IROQUOIS RIVER																									
IR01	Highway 55 gage, Ind.	14:50	0.0	36	0.0057	0.0007	<0.0002	0.0017	4	3	0.0052	0.0007	1.8	0.1	0.0012	0.0002	0.014	0.001							
IR03	Brook, Ind.	14:30	5.9	48*	0.0077	0.0004	0.0013	0.0012	63	4	0.0101	0.0003	1.3	0.2	0.0023	0.0002	0.043	0.002							
IR05	100 W bridge, Ind.	14:10	12.0	51*	0.0066	0.0001	0.0014	0.0017	5	2	0.0055	0.0006	1.8	0.2	0.0014	0.0002	0.018	0.001							
IR07	Newton Co. Fairgrounds, Ind.	13:55	21.1	62*	0.0067	0.0000	0.0018	0.0019	25	5	0.0072	0.0014	2.2	0.1	0.0019	0.0001	0.028	0.000							
IR08	Iroquois, Ill.	13:00	33.1	75	0.0061	0.0006	0.0017	0.0010	23	3	0.0063	0.0005	2.2	0.2	0.0020	0.0001	0.029	0.000							
SUGAR CREEK																									
SC03	Highway 71, Ind.	16:25	9.8	na	0.0037	0.0009	0.0009	0.0015	6	4	0.0051	0.0008	3.2	0.0	0.0010	0.0001	0.021	0.001							
SC08	2440 E Rd., Ill.	17:00	29.9	na	0.0023	0.0006	0.0006	0.0010	<2	4	0.0043	0.0005	1.4	0.3	0.0009	0.0000	0.018	0.002							

* These values are estimates

¹ More complete explanations of these are found in tables 1 and 2

Table A10. Concentrations of trace elements in grab samples collected on the synoptic trip of April 20, 1999 -- continued

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

ID ¹	Site ¹	Time	Dist. ¹ km	Q cms	Li µg/L	Lu µg/L		Mn µg/L		Mo µg/L		Nd µg/L		Ni µg/L		Pb µg/L	
					Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	
IROQUOIS RIVER																	
IR01	Highway 55 gage, Ind.	14:50	0.0	36	2.1	0.1	0.0017	0.0002	11.9	1.7	3.0	0.0	0.020	0.000	0.30	0.07	0.16
IR03	Brook, Ind.	14:30	5.9	48*	2.2	0.0	0.0016	0.0002	10.8	1.8	2.9	0.1	0.052	0.002	1.17	0.13	0.050
IR05	100 W bridge, Ind.	14:10	12.0	51*	2.0	0.0	0.0015	0.0001	8.6	1.3	2.7	0.0	0.025	0.001	0.68	0.46	0.028
IR07	Newton Co. Fairgrounds, Ind.	13:55	21.1	62*	1.9	0.1	0.0019	0.0001	7.0	1.3	2.6	0.0	0.035	0.001	1.18	0.07	0.035
IR08	Iroquois, Ill.	13:00	33.1	75	1.8	0.0	0.0016	0.0000	6.0	1.0	2.4	0.0	0.036	0.001	0.67	0.55	0.041
SUGAR CREEK																	
SC03	Highway 71, Ind.	16:25	9.8	na	2.2	0.2	0.0006	0.0001	9.9	1.6	2.3	0.0	0.025	0.002	0.29	0.46	0.043
SC08	2440 E Rd., Ill.	17:00	29.9	na	2.2	0.2	0.0005	0.0002	7.3	1.3	2.3	0.1	0.021	0.002	0.31	0.42	0.032

* These values are estimates

¹ More complete explanations of these are found in tables 1 and 2

Table A10. Concentrations of trace elements in grab samples collected on the synoptic trip of April 20, 1999 -- continued

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

ID ¹	Site ¹	Time	Dist. ¹ km	Q cms	Pr µg/L		Rb µg/L		Re µg/L		Sb µg/L		Se µg/L		Sm µg/L		Sr µg/L	
					Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER																		
IR01	Highway 55 gage, Ind.	14:50	0.0	36	0.0041	0.0002	0.65	0.01	0.0137	0.0004	0.12	0.01	0.7	0.1	0.0051	0.0007	179	2
IR03	Brook, Ind.	14:30	5.9	48 [*]	0.0123	0.0006	0.70	0.01	0.0127	0.0007	0.13	0.03	0.8	0.1	0.010	0.000	173	2
IR05	100 W bridge, Ind.	14:10	12.0	51 [*]	0.0055	0.0005	0.61	0.01	0.0128	0.0003	0.12	0.01	0.8	0.1	0.0040	0.0007	166	2
IR07	Newton Co. Fairgrounds, Ind.	13:55	21.1	62 [*]	0.0078	0.0004	0.65	0.02	0.0121	0.0001	0.13	0.02	0.7	0.1	0.0057	0.0001	160	2
IR08	Iroquois, Ill.	13:00	33.1	75	0.0082	0.0003	0.62	0.02	0.0121	0.0005	0.12	0.01	0.9	0.2	0.0070	0.0007	149	1
SUGAR CREEK																		
SC03	Highway 71, Ind.	16:25	9.8	na	0.0055	0.0004	0.36	0.00	0.0103	0.0004	0.10	0.01	1.0	0.2	0.0050	0.0005	112	1
SC08	2440 E Rd., Ill.	17:00	29.9	na	0.0042	0.0002	0.28	0.01	0.0102	0.0003	0.14	0.04	0.9	0.2	0.0038	0.0007	104	1

* These values are estimates

¹ More complete explanations of these are found in tables 1 and 2

Table A10. Concentrations of trace elements in grab samples collected on the synoptic trip of April 20, 1999 -- continued

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

ID ¹	Site ¹	Time	Dist. ¹ km	Q cms	Ta µg/L		Tb µg/L		Te µg/L		Th µg/L		Ti µg/L		Tl µg/L		Tm µg/L	
					Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER																		
IR01	Highway 55 gage, Ind.	14:50	0.0	36	<0.01	0.01	0.0007	0.0001	<0.02	0.00	0.0020	0.0001	0.1	0.1	0.010	0.000	0.0012	0.0001
IR03	Brook, Ind.	14:30	5.9	48 [*]	<0.01	0.01	0.0018	0.0001	<0.02	0.00	0.0074	0.0012	1.6	0.0	0.008	0.000	0.0012	0.0003
IR05	100 W bridge, Ind.	14:10	12.0	51 [*]	<0.01	0.01	0.0007	0.0001	<0.02	0.01	0.0029	0.0001	0.2	0.0	0.011	0.002	0.0010	0.0001
IR07	Newton Co. Fairgrounds, Ind.	13:55	21.1	62 [*]	<0.01	0.01	0.0013	0.0000	<0.02	0.02	0.0064	0.0016	1.0	0.0	0.011	0.001	0.0012	0.0001
IR08	Iroquois, Ill.	13:00	33.1	75	<0.01	0.01	0.0008	0.0001	<0.02	0.01	0.0050	0.0004	0.7	0.1	0.011	0.002	0.0011	0.0001
SUGAR CREEK																		
SC03	Highway 71, Ind.	16:25	9.8	na	<0.01	0.01	0.0007	0.0002	<0.02	0.01	0.0031	0.0013	0.4	0.1	0.011	0.002	0.0005	0.0001
SC08	2440 E Rd., Ill.	17:00	29.9	na	<0.01	0.01	0.0006	0.0000	<0.02	0.01	0.0026	0.0010	0.2	0.1	0.010	0.002	0.0004	0.0001

* These values are estimates

¹ More complete explanations of these are found in tables 1 and 2

Table A10. Concentrations of trace elements in grab samples collected on the synoptic trip of April 20, 1999 -- continued

[All samples collected from the center of the channel; km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

ID ¹	Site ¹	Time	Dist. ¹ km	Q cms	U µg/L	V µg/L	W µg/L	Y µg/L	Yb µg/L	Zn µg/L	Zr µg/L							
					Avg	SD	Avg	SD	Avg	SD	Avg	SD						
IROQUOIS RIVER																		
IR01	Highway 55 gage, Ind.	14:50	0.0	36	1.7	0.1	<0.2	0.1	<0.08	0.01	0.040	0.000	0.0069	0.0005	0.6	0.1	0.115	0.002
IR03	Brook, Ind.	14:30	5.9	48*	1.6	0.1	0.3	0.1	<0.08	0.05	0.063	0.001	0.0093	0.0002	0.8	0.1	0.154	0.008
IR05	100 W bridge, Ind.	14:10	12.0	51*	1.6	0.0	0.2	0.1	<0.08	0.04	0.044	0.002	0.0083	0.0004	0.6	0.1	0.122	0.004
IR07	Newton Co. Fairgrounds, Ind.	13:55	21.1	62*	1.5	0.1	0.3	0.1	<0.08	0.00	0.049	0.001	0.0079	0.0003	0.8	0.1	0.154	0.003
IR08	Iroquois, Ill.	13:00	33.1	75	1.4	0.0	0.5	0.3	<0.08	0.01	0.048	0.001	0.0087	0.0003	2.4	0.1	0.148	0.010
SUGAR CREEK																		
SC03	Highway 71, Ind.	16:25	9.8	na	1.6	0.0	0.3	0.0	<0.08	0.00	0.037	0.000	0.0027	0.0003	0.3	0.0	0.045	0.002
SC08	2440 E Rd., Ill.	17:00	29.9	na	1.4	0.0	<0.2	0.0	<0.08	0.01	0.031	0.001	0.0024	0.0002	0.4	0.3	0.036	0.006

* These values are estimates

¹ More complete explanations of these are found in tables 1 and 2

Table A11. Concentrations of nutrients, dissolved organic carbon (DOC), and suspended sediment in composite samples collected on the Lagrangian trip of June 1999.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; mg/L, milligrams per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	NO ₃		NO ₂		NH ₄		Kjeldahl N		PO ₄		P		DOC		Suspended Sediment mg/L Value
						mg N/L	SD	mg N/L	SD	mg N/L	SD	mg P/L	SD	mg/L	SD	mg C/L	SD			
						Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD			
IROQUOIS RIVER																				
IR01	Highway 55 gage, Ind.	0.0	06/25/99	13:15	6.7	4.60	0.04	0.048	0.001	0.032	0.006	0.54	0.003	0.030	0.003	0.038	0.003	5.8	0.2	70
IR02	Highway 16 bridge, Ind.	2.0	06/25/99	16:00	6.8	4.57	0.01	0.049	0.001	0.027	0.007	0.55	0.014	0.033	0.014	0.039	0.003	6.0	0.4	53
IR03	Brook, Ind.	5.9	06/25/99	21:20	7.8	4.54	0.15	0.049	0.001	0.038	0.006	0.58	0.004	0.026	0.004	0.041	0.002	6.4	0.5	na
IR04	Meridian Rd. bridge, Ind.	9.4	06/26/99	03:15	8.1	4.95	0.15	0.055	0.001	0.036	0.001	0.54	0.002	0.027	0.002	0.042	0.003	5.9	0.4	56
IR05	CR 100W bridge, Ind.	12.0	06/26/99	09:00	7.2	5.68	0.02	0.063	0.001	0.036	0.002	0.56	0.010	0.033	0.010	0.047	0.001	6.1	0.4	66
IR06	Highway 41 bridge, Ind.	16.5	06/26/99	12:40	7.1	5.07	0.14	0.054	0.002	0.030	0.005	0.55	0.006	0.031	0.006	0.046	0.001	5.9	0.3	60
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/26/99	17:30	5.7	4.83	0.11	0.049	0.002	0.030	0.005	0.54	0.017	0.026	0.017	0.046	0.002	5.8	0.2	52
SUGAR CREEK																				
SC01	CR 400W bridge, Ind.	0.0	06/22/99	17:00	0.29	7.92	0.16	0.039	0.001	0.011	0.006	0.27	< 0.02	< 0.02	0.00	< 0.002	0.001	2.3	0.1	na
SC02	CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	7.68	0.11	0.048	0.001	0.014	0.003	0.30	< 0.02	< 0.02	0.00	< 0.002	0.003	2.2	0.0	17
SC03	Highway 71 bridge, Ind.	9.8	06/23/99	07:00	0.51	7.74	0.04	0.042	0.000	< 0.002	0.006	0.27	< 0.02	< 0.02	0.00	< 0.002	0.002	2.1	0.1	23
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	06/23/99	12:00	1.23	8.64	0.31	0.035	0.001	0.009	0.000	0.28	< 0.02	< 0.02	0.00	< 0.002	0.000	2.0	0.1	18
SC05	CR 3000E bridge, Ill.	17.7	06/23/99	16:30	1.27	8.29	0.05	0.032	0.001	< 0.003	0.002	0.30	< 0.02	< 0.02	0.00	< 0.002	0.002	1.9	0.1	8
SC06	CR 2800E bridge, Ill.	21.4	06/23/99	20:10	1.52	8.75	0.10	0.030	0.001	< 0.003	0.002	0.27	< 0.02	< 0.02	0.01	< 0.002	0.001	na	na	13
SC07	CR 900N bridge, Ill.	26.9	06/24/99	02:45	1.57	8.60	0.01	0.029	0.001	< 0.003	0.002	0.29	< 0.02	< 0.02	0.00	< 0.002	0.001	2.0	0.1	20
SC08	CR 2440E bridge, Ill.	30.1	06/24/99	06:25	1.91	8.81	0.09	0.031	0.001	0.010	0.002	0.26	< 0.02	< 0.02	0.00	< 0.002	0.001	2.0	0.1	31
SC09	Milford, Ill.	34.4	06/24/99	10:15	2.09	8.36	0.14	0.029	0.000	0.027	0.003	0.28	< 0.02	< 0.02	0.00	0.012	0.001	2.1	0.2	44
SC10	Above Mud Cr. #3, Ill.	37.8	06/24/99	14:10	2.22	8.25	0.14	0.029	0.001	0.025	0.004	0.29	< 0.02	< 0.02	0.00	0.011	0.002	2.5	0.2	66
SUGAR CREEK TRIBUTARIES																				
SCT1	Mud Cr. #1, Ind.	11.7	06/23/99	09:30	0.64	9.99	0.15	0.031	0.002	0.010	0.003	0.29	< 0.02	< 0.02	0.00	0.005	0.001	2.0	0.1	48
SCT2	Mud Cr. #2, Ill.	21.2	06/23/99	18:45	0.49	11.7	0.4	0.047	0.000	< 0.003	0.008	0.28	< 0.02	< 0.02	0.01	< 0.002	0.001	1.9	0.0	5
SCT3	Unnamed trib., Ill.	28.5	06/24/99	01:20	0.16	12.1	0.4	0.066	0.002	0.016	0.001	0.36	< 0.02	< 0.02	0.00	0.009	0.003	2.1	0.1	24

¹ More complete explanations of these are found in table 1.

Table A12. Concentrations of major ions in composite samples collected on the Lagrangian trip of June 1999.

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average, SD, standard deviation; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Cl mg/L	Avg	SD	SO ₄ mg/L	HCO ₃ + CC mg C/L	Br µg/L	Na mg/L	K mg/L	Mg mg/L	Ca mg/L	SiO ₂ mg/L							
IROQUOIS RIVER																							
IR01	Highway 55 gage, Ind.	0.0	06/25/99	13:15	6.7	25.7	1.0	59.6	1.0	46.6	0.2	10	1	10	0	2.2	0.0	23	1	76	0	6.8	0.2
IR02	Highway 16 bridge, Ind.	2.0	06/25/99	16:00	6.8	25.3	0.9	57.8	0.4	46.2	0.1	12	3	9.8	0.2	2.2	0.1	22	1	75	1	6.8	0.1
IR03	Brook, Ind.	5.9	06/25/99	21:20	7.8	26.1	1.0	60.6	0.7	47.1	0.3	12	2	11	0	2.3	0.0	23	0	79	0	7.0	0.1
IR04	Meridian Rd. bridge, Ind.	9.4	06/26/99	03:15	8.1	24.9	0.9	55.3	0.4	45.6	0.0	16	2	9.8	0.1	2.2	0.1	22	0	74	1	7.1	0.1
IR05	CR 100W bridge, Ind.	12.0	06/26/99	09:00	7.2	24.5	0.8	51.1	0.1	44.2	0.1	10	2	8.3	0.1	2.3	0.0	21	0	68	0	7.4	0.0
IR06	Highway 41 bridge, Ind.	16.5	06/26/99	12:40	7.1	24.7	1.2	53.5	0.6	45.2	0.5	23	3	8.5	0.3	2.0	0.0	22	1	69	0	7.0	0.2
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/26/99	17:30	5.7	25.2	1.3	55.9	0.9	45.8	0.1	18	3	8.9	0.3	2.1	0.1	23	1	73	1	7.0	0.2
SUGAR CREEK																							
SC01	CR 400W bridge, Ind.	0.0	06/22/99	17:00	0.29	17.8	na	53.1	na	47.1	0.4	10	3	6.5	0.1	0.90	0.02	28	1	78	0	6.7	0.1
SC02	CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	18.6	na	55.4	na	48.6	0.2	11	0	7.4	0.2	0.97	0.01	28	0	75	1	5.2	0.1
SC03	Highway 71 bridge, Ind.	9.8	06/23/99	07:00	0.51	17.5	na	59.5	na	49.2	0.1	11	4	6.5	0.1	0.93	0.01	27	0	77	1	4.2	0.1
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	06/23/99	12:00	1.23	19.3	na	62.4	na	46.0	0.7	8	7	6.7	0.2	1.1	0.0	29	0	79	1	5.5	0.1
SC05	CR 3000E bridge, Ill.	17.7	06/23/99	16:30	1.27	19.0	na	63.5	na	43.9	0.3	9	2	6.7	0.5	1.1	0.0	28	0	73	2	4.9	0.0
SC06	CR 2800E bridge, Ill.	21.4	06/23/99	20:10	1.52	18.9	na	62.5	na	na	na	10	3	6.1	0.1	1.0	0.0	29	1	72	1	4.8	0.0
SC07	CR 900N bridge, Ill.	26.9	06/24/99	02:45	1.57	18.6	na	60.8	na	44.3	0.3	14	2	5.9	0.1	0.99	0.02	28	0	70	1	3.7	0.1
SC08	CR 2440E bridge, Ill.	30.1	06/24/99	06:25	1.91	18.5	na	58.7	na	44.9	0.0	16	4	6.2	0.2	1.1	0.0	29	1	70	2	4.1	0.1
SC09	Milford, Ill.	34.4	06/24/99	10:15	2.09	18.5	na	56.1	na	44.4	0.0	20	7	6.6	0.1	1.1	0.0	28	1	69	0	4.3	0.2
SC10	Above Mud Cr. #3, Ill.	37.8	06/24/99	14:10	2.22	18.8	na	56.5	na	44.3	0.0	21	7	6.6	0.2	1.1	0.1	24	1	64	2	4.3	0.1
SUGAR CREEK TRIBUTARIES																							
SCT1	Mud Cr. #1, Ind.	11.7	06/23/99	09:30	0.64	18.9	na	59.9	na	46.7	0.1	14	3	6.4	0.1	1.0	0.0	28	1	78	1	6.7	0.2
SCT2	Mud Cr. #2, Ill.	21.2	06/23/99	18:45	0.49	19.8	na	46.6	na	41.8	0.1	11	2	6.3	0.1	0.91	0.01	31	0	66	0	5.4	0.1
SCT3	Unnamed trib., Ill.	28.5	06/24/99	01:20	0.16	21.6	2.0	44.9	0.3	46.1	0.2	10	2	7.2	0.0	1.1	0.0	31	1	69	0	6.3	0.1

¹ More complete explanations of these are found in table 1.

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999.

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L	Bi µg/L						
IROQUOIS RIVER																	
IR01	Highway 55 gage, Ind.	0.0	06/25/99	13:15	6.7	2.49	0.11	1.11	0.06	59	1	61.9	1.2	<0.02	0.00	0.0016	0.0002
IR02	Highway 16 bridge, Ind.	2.0	06/25/99	16:00	6.8	2.80	0.10	1.09	0.03	56	0	60.5	1.1	<0.02	0.02	0.0023	0.0006
IR03	Brook, Ind.	5.9	06/25/99	21:20	7.8	1.90	0.17	1.14	0.05	61	1	59.5	0.9	<0.02	0.00	0.0006	0.0001
IR04	Meridian Rd. bridge, Ind.	9.4	06/26/99	03:15	8.1	2.10	0.32	1.15	0.04	57	3	58.6	1.8	<0.02	0.02	0.0014	0.0002
IR05	CR 100W bridge, Ind.	12.0	06/26/99	09:00	7.2	2.30	0.00	1.10	0.09	49	1	57.0	1.7	<0.02	0.03	0.0010	0.0001
IR06	Highway 41 bridge, Ind.	16.5	06/26/99	12:40	7.1	2.21	0.05	1.05	0.03	51	2	56.8	1.2	<0.01	0.01	0.0015	0.0003
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/26/99	17:30	5.7	1.80	0.05	1.11	0.08	53	1	59.0	0.5	<0.01	0.01	0.0005	0.0002
SUGAR CREEK																	
SC01	CR 400W bridge, Ind.	0.0	06/22/99	17:00	0.29	2.62	0.01	0.65	0.03	52	1	51.8	0.8	<0.02	0.00	0.0052	0.0022
SC02	CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	1.00	0.25	0.54	0.03	52	1	52.3	0.7	<0.02	0.01	0.0021	0.0002
SC03	Highway 71 bridge, Ind.	9.8	06/23/99	07:00	0.51	2.21	0.11	0.50	0.03	47	0	50.5	1.5	0.03	0.03	0.0019	0.0004
SC04	Stateline Rd. bridge, Ill. - Ind.	14.0	06/23/99	12:00	1.23	2.27	0.03	0.54	0.07	43	1	50.8	0.9	<0.02	0.01	0.0024	0.0009
SC05	CR 3000E bridge, Ill.	17.7	06/23/99	16:30	1.27	1.60	0.24	0.50	0.04	44	2	47.9	0.9	<0.02	0.01	0.0013	0.0004
SC06	CR 2800E bridge, Ill.	21.4	06/23/99	20:10	1.52	1.96	0.09	0.51	0.04	45	1	46.4	1.1	<0.02	0.02	0.0010	0.0002
SC07	CR 900N bridge, Ill.	26.9	06/24/99	02:45	1.57	1.23	0.03	0.48	0.01	44	0	43.0	0.1	<0.01	0.00	0.0011	0.0009
SC08	CR 2440E bridge, Ill.	30.1	06/24/99	06:25	1.91	1.30	0.04	0.53	0.04	48	1	42.8	0.9	<0.01	0.00	0.0014	0.0004
SC09	Milford, Ill.	34.4	06/24/99	10:15	2.09	2.09	0.05	0.56	0.04	47	2	41.4	0.7	<0.01	0.01	0.0033	0.0025
SC10	Above Mud Cr. #3, Ill.	37.8	06/24/99	14:10	2.22	1.57	0.13	0.61	0.03	44	2	40.7	0.6	0.02	0.01	0.0040	0.0004
SUGAR CREEK TRIBUTARIES																	
SCT1	Mud Cr. #1, Ind.	11.7	06/23/99	09:30	0.64	2.26	0.19	0.49	0.07	34	1	49.2	1.1	<0.02	0.01	0.0014	0.0005
SCT2	Mud Cr. #2, Ill.	21.2	06/23/99	18:45	0.49	1.61	0.21	0.51	0.03	61	1	30.4	0.7	<0.02	0.01	0.0020	0.0010
SCT3	Unnamed trib., Ill.	28.5	06/24/99	01:20	0.16	1.45	0.06	0.79	0.05	63	1	34.4	0.8	<0.02	0.01	0.0012	0.0001

¹ More complete explanations of these are found in table 1.

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Cd µg/L	Ce µg/L	Co µg/L	Cr µg/L	Cs µg/L
IROQUOIS RIVER										
IR01	Highway 55 gage, Ind.	0.0	06/25/99	13:15	6.7	0.015	0.003	0.099	0.008	<0.002
IR02	Highway 16 bridge, Ind.	2.0	06/25/99	16:00	6.8	0.020	0.002	0.114	0.023	<0.002
IR03	Brook, Ind.	5.9	06/25/99	21:20	7.8	0.014	0.001	0.127	0.012	<0.002
IR04	Meridian Rd. bridge, Ind.	9.4	06/26/99	03:15	8.1	0.019	0.007	0.122	0.032	<0.002
IR05	CR 100W bridge, Ind.	12.0	06/26/99	09:00	7.2	0.012	0.001	0.126	0.000	<0.002
IR06	Highway 41 bridge, Ind.	16.5	06/26/99	12:40	7.1	0.009	0.002	0.143	0.009	<0.003
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/26/99	17:30	5.7	0.006	0.002	0.145	0.011	<0.003
SUGAR CREEK										
SC01	CR 400W bridge, Ind.	0.0	06/22/99	17:00	0.29	0.024	0.001	0.046	0.015	<0.002
SC02	CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	0.016	0.003	0.054	0.011	<0.002
SC03	Highway 71 bridge, Ind.	9.8	06/23/99	07:00	0.51	0.038	0.003	0.005	0.022	<0.003
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	06/23/99	12:00	1.23	0.024	0.009	0.025	0.016	<0.002
SC05	CR 3000E bridge, Ill.	17.7	06/23/99	16:30	1.27	0.015	0.003	0.036	0.014	<0.002
SC06	CR 2800E bridge, Ill.	21.4	06/23/99	20:10	1.52	0.017	0.004	0.046	0.001	<0.002
SC07	CR 900N bridge, Ill.	26.9	06/24/99	02:45	1.57	0.005	0.002	0.020	0.010	<0.003
SC08	CR 2440E bridge, Ill.	30.1	06/24/99	06:25	1.91	0.007	0.006	0.026	0.003	<0.003
SC09	Milford, Ill.	34.4	06/24/99	10:15	2.09	<0.002	0.000	0.060	0.006	<0.003
SC10	Above Mud Cr. #3, Ill.	37.8	06/24/99	14:10	2.22	0.005	0.001	0.038	0.004	<0.003
SUGAR CREEK TRIBUTARIES										
SCT1	Mud Cr. #1, Ind.	11.7	06/23/99	09:30	0.64	0.013	0.001	<0.004	0.024	<0.002
SCT2	Mud Cr. #2, Ill.	21.2	06/23/99	18:45	0.49	0.018	0.003	0.254	0.013	<0.002
SCT3	Unnamed trib., Ill.	28.5	06/24/99	01:20	0.16	0.015	0.003	0.029	0.012	<0.002

¹ More complete explanations of these are found in table I.

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Cu µg/L		Dy µg/L		Er µg/L		Eu µg/L	
						Avg	SD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER													
IR01	Highway 55 gage, Ind.	0.0	06/25/99	13:15	6.7	0.76	0.03	0.0045	0.0001	0.0043	0.0004	<0.0004	0.0001
IR02	Highway 16 bridge, Ind.	2.0	06/25/99	16:00	6.8	0.94	0.04	0.0042	0.0005	0.0043	0.0003	<0.0004	0.0024
IR03	Brook, Ind.	5.9	06/25/99	21:20	7.8	0.86	0.05	0.0049	0.0006	0.0047	0.0006	<0.0004	0.0005
IR04	Meridian Rd. bridge, Ind.	9.4	06/26/99	03:15	8.1	0.94	0.16	0.0042	0.0013	0.0038	0.0002	0.0017	0.0031
IR05	CR 100W bridge, Ind.	12.0	06/26/99	09:00	7.2	0.98	0.01	0.0037	0.0007	0.0038	0.0000	0.0008	0.0011
IR06	Highway 41 bridge, Ind.	16.5	06/26/99	12:40	7.1	0.85	0.02	0.0041	0.0007	0.0042	0.0005	0.0020	0.0002
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/26/99	17:30	5.7	0.86	0.08	0.0046	0.0004	0.0047	0.0002	0.0025	0.0004
SUGAR CREEK													
SC01	CR 400W bridge, Ind.	0.0	06/22/99	17:00	0.29	0.60	0.03	0.0056	0.0004	0.0032	0.0003	0.0009	0.0010
SC02	CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	0.44	0.01	0.0048	0.0004	0.0030	0.0001	0.0009	0.0013
SC03	Highway 71 bridge, Ind.	9.8	06/23/99	07:00	0.51	0.44	0.04	0.0044	0.0002	0.0030	0.0007	0.0005	0.0016
SC04	Staline Rd. bridge, Ill.-Ind.	14.0	06/23/99	12:00	1.23	0.53	0.02	0.0047	0.0004	0.0028	0.0002	0.0010	0.0010
SC05	CR 3000E bridge, Ill.	17.7	06/23/99	16:30	1.27	0.54	0.01	0.0031	0.0012	0.0025	0.0001	<0.0004	0.0005
SC06	CR 2800E bridge, Ill.	21.4	06/23/99	20:10	1.52	0.57	0.01	0.0031	0.0008	0.0019	0.0002	0.0008	0.0012
SC07	CR 900N bridge, Ill.	26.9	06/24/99	02:45	1.57	0.45	0.04	0.0026	0.0006	0.0019	0.0003	0.0017	0.0004
SC08	CR 2440E bridge, Ill.	30.1	06/24/99	06:25	1.91	0.55	0.12	0.0032	0.0004	0.0027	0.0004	0.0014	0.0008
SC09	Milford, Ill.	34.4	06/24/99	10:15	2.09	0.51	0.02	0.0034	0.0009	0.0029	0.0002	0.0014	0.0004
SC10	Above Mud Cr. #3, Ill.	37.8	06/24/99	14:10	2.22	0.51	0.03	0.0038	0.0006	0.0025	0.0003	0.0019	0.0010
SUGAR CREEK TRIBUTARIES													
SCT1	Mud Cr. #1, Ind.	11.7	06/23/99	09:30	0.64	0.50	0.11	0.0054	0.0004	0.0039	0.0000	<0.0004	0.0007
SCT2	Mud Cr. #2, Ill.	21.2	06/23/99	18:45	0.49	0.63	0.02	0.0042	0.0009	0.0024	0.0001	0.0010	0.0002
SCT3	Unnamed trib., Ill.	28.5	06/24/99	01:20	0.16	0.58	0.03	0.0036	0.0006	0.0030	0.0005	<0.0004	0.0008

¹ More complete explanations of these are found in table I.

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Fe µg/L Avg SD	Gd µg/L Avg SD	Hg ng/L Avg SD	Ho µg/L Avg SD	La µg/L Avg SD	Li µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	06/25/99	13:15	6.7	11 0	0.0047 0.0003	<0.3 0.1	0.0010 0.0000	0.0134 0.0005	3.86 0.05
IR02	Highway 16 bridge, Ind.	2.0	06/25/99	16:00	6.8	9.2 0.1	0.0053 0.0014	<0.3 0.1	0.0011 0.0003	0.0117 0.0006	3.95 0.22
IR03	Brook, Ind.	5.9	06/25/99	21:20	7.8	11 0	0.0047 0.0007	<0.3 0.0	0.0013 0.0001	0.0126 0.0002	3.93 0.02
IR04	Meridian Rd. bridge, Ind.	9.4	06/26/99	03:15	8.1	8.4 0.3	0.0051 0.0002	<0.3 0.2	0.0010 0.0001	0.0121 0.0001	3.74 0.21
IR05	CR 100W bridge, Ind.	12.0	06/26/99	09:00	7.2	5.9 0.0	0.0041 0.0007	<0.3 0.0	0.0010 0.0002	0.0103 0.0005	3.53 0.16
IR06	Highway 41 bridge, Ind.	16.5	06/26/99	12:40	7.1	6.8 0.2	0.0047 0.0003	<0.3 0.1	0.0012 0.0000	0.0125 0.0003	3.76 0.26
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/26/99	17:30	5.7	7.1 0.2	0.0065 0.0006	<0.3 0.0	0.0012 0.0001	0.0144 0.0006	3.77 0.22
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	06/22/99	17:00	0.29	21 0	0.0073 0.0009	2.7 0.4	0.0013 0.0001	0.0262 0.0010	4.48 0.21
SC02	CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	15 0	0.0060 0.0005	<0.3 0.1	0.0010 0.0001	0.0195 0.0009	4.54 0.05
SC03	Highway 71 bridge, Ind.	9.8	06/23/99	07:00	0.51	10 0	0.0064 0.0009	0.4 0.1	0.0013 0.0000	0.0202 0.0000	4.20 0.39
SC04	Stateline Rd. bridge, III.-Ind.	14.0	06/23/99	12:00	1.23	5.5 0.2	0.0051 0.0006	<0.3 0.1	0.0010 0.0001	0.0159 0.0008	3.49 0.28
SC05	CR 3000E bridge, III.	17.7	06/23/99	16:30	1.27	4.6 0.2	0.0035 0.0006	<0.3 0.1	0.0005 0.0001	0.0089 0.0001	3.61 0.03
SC06	CR 2800E bridge, III.	21.4	06/23/99	20:10	1.52	3.8 0.1	0.0040 0.0006	<0.3 0.2	0.0007 0.0002	0.0095 0.0004	3.89 0.19
SC07	CR 900N bridge, III.	26.9	06/24/99	02:45	1.57	3.0 0.1	0.0036 0.0002	<0.3 0.1	0.0008 0.0001	0.0092 0.0006	3.60 0.12
SC08	CR 2440E bridge, III.	30.1	06/24/99	06:25	1.91	2.6 0.0	0.0045 0.0005	<0.3 0.2	0.0007 0.0001	0.0119 0.0006	3.73 0.10
SC09	Milford, III.	34.4	06/24/99	10:15	2.09	2.6 0.1	0.0049 0.0008	<0.3 0.1	0.0009 0.0002	0.0117 0.0003	3.59 0.16
SC10	Above Mud Cr. #3, III.	37.8	06/24/99	14:10	2.22	2.3 0.2	0.0038 0.0008	<0.3 0.2	0.0010 0.0001	0.0121 0.0005	3.66 0.23
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	06/23/99	09:30	0.64	3.4 0.0	0.0061 0.0011	<0.3 0.2	0.0013 0.0003	0.0173 0.0012	2.82 0.38
SCT2	Mud Cr. #2, III.	21.2	06/23/99	18:45	0.49	4.6 0.1	0.0040 0.0005	<0.3 0.1	0.0008 0.0002	0.0119 0.0007	4.18 0.36
SCT3	Unnamed trib., III.	28.5	06/24/99	01:20	0.16	2.3 0.1	0.0039 0.0006	<0.3 0.1	0.0008 0.0001	0.0105 0.0002	4.88 0.20

¹ More complete explanations of these are found in table I.

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Lu µg/L		Mn µg/L		Mo µg/L		Nd µg/L		Ni µg/L		Pb µg/L	
						Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER																	
IR01	Highway 55 gage, Ind.	0.0	06/25/99	13:15	6.7	0.0015	0.0003	20.2	0.4	4.84	0.04	0.0152	0.0000	0.86	0.24	0.034	0.008
IR02	Highway 16 bridge, Ind.	2.0	06/25/99	16:00	6.8	0.0015	0.0001	20.8	0.1	4.90	0.05	0.0139	0.0008	0.91	0.72	0.052	0.007
IR03	Brook, Ind.	5.9	06/25/99	21:20	7.8	0.0014	0.0001	27.2	0.2	4.95	0.12	0.0165	0.0017	0.90	0.38	0.027	0.004
IR04	Meridian Rd. bridge, Ind.	9.4	06/26/99	03:15	8.1	0.0013	0.0004	13.3	0.1	4.82	0.32	0.0156	0.0004	1.38	1.02	0.117	0.089
IR05	CR 100W bridge, Ind.	12.0	06/26/99	09:00	7.2	0.0014	0.0001	14.1	0.3	4.26	0.11	0.0140	0.0012	1.44	0.17	0.029	0.007
IR06	Highway 41 bridge, Ind.	16.5	06/26/99	12:40	7.1	0.0010	0.0000	24.8	0.3	4.58	0.01	0.0161	0.0006	1.25	0.05	0.014	0.000
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/26/99	17:30	5.7	0.0012	0.0001	31.5	1.9	4.75	0.01	0.0174	0.0012	1.15	0.17	0.017	0.001
SUGAR CREEK																	
SC01	CR 400W bridge, Ind.	0.0	06/22/99	17:00	0.29	0.0007	0.0001	22.3	0.4	4.72	0.07	0.0314	0.0027	1.14	0.23	0.140	0.003
SC02	CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	0.0006	0.0001	22.6	0.4	4.51	0.07	0.0213	0.0020	1.23	0.51	0.031	0.001
SC03	Highway 71 bridge, Ind.	9.8	06/23/99	07:00	0.51	0.0006	0.0001	22.5	0.2	4.43	0.12	0.0234	0.0009	0.25	0.63	0.059	0.002
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	06/23/99	12:00	1.23	0.0005	0.0002	11.8	0.0	4.13	0.03	0.0184	0.0022	0.31	0.28	0.034	0.006
SC05	CR 3000E bridge, Ill.	17.7	06/23/99	16:30	1.27	0.0003	0.0000	6.82	0.23	4.31	0.03	0.0110	0.0004	0.56	0.59	0.024	0.004
SC06	CR 2800E bridge, Ill.	21.4	06/23/99	20:10	1.52	0.0004	0.0000	4.85	0.15	4.21	0.08	0.0121	0.0003	0.36	0.57	0.043	0.004
SC07	CR 900N bridge, Ill.	26.9	06/24/99	02:45	1.57	0.0002	0.0001	3.6	0.3	4.14	0.08	0.0107	0.0004	0.57	0.01	0.012	0.002
SC08	CR 2440E bridge, Ill.	30.1	06/24/99	06:25	1.91	0.0002	0.0001	9.3	0.4	4.14	0.07	0.0151	0.0008	0.37	0.14	0.019	0.014
SC09	Milford, Ill.	34.4	06/24/99	10:15	2.09	0.0004	0.0001	6.2	0.2	3.97	0.04	0.0170	0.0039	0.42	0.29	0.016	0.002
SC10	Above Mud Cr. #3, Ill.	37.8	06/24/99	14:10	2.22	0.0003	0.0001	3.9	0.2	4.10	0.08	0.0147	0.0006	0.41	0.06	0.010	0.002
SUGAR CREEK TRIBUTARIES																	
SCT1	Mud Cr. #1, Ind.	11.7	06/23/99	09:30	0.64	0.0005	0.0001	12.5	0.4	3.67	0.11	0.0204	0.0001	<0.01	0.52	0.022	0.005
SCT2	Mud Cr. #2, Ill.	21.2	06/23/99	18:45	0.49	0.0005	0.0001	4.29	0.02	3.26	0.04	0.0155	0.0006	0.25	0.43	0.039	0.003
SCT3	Unnamed trib., Ill.	28.5	06/24/99	01:20	0.16	0.0003	0.0000	9.86	0.15	3.58	0.02	0.0141	0.0013	0.43	0.37	0.019	0.003

¹ More complete explanations of these are found in table 1.

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Pr µg/L	Rb µg/L	Re µg/L	Sb µg/L	Se µg/L	Sm µg/L						
IROQUOIS RIVER																	
IR01	Highway 55 gage, Ind.	0.0	06/25/99	13:15	6.7	0.0034	0.0003	0.953	0.015	0.0145	0.0008	0.146	0.008	< 0.3	0.25	0.0040	0.0004
IR02	Highway 16 bridge, Ind.	2.0	06/25/99	16:00	6.8	0.0032	0.0001	0.960	0.028	0.0135	0.0006	0.151	0.007	0.46	0.23	0.0040	0.0010
IR03	Brook, Ind.	5.9	06/25/99	21:20	7.8	0.0036	0.0002	0.908	0.008	0.0153	0.0017	0.147	0.004	< 0.3	0.04	0.0043	0.0000
IR04	Meridian Rd. bridge, Ind.	9.4	06/26/99	03:15	8.1	0.0033	0.0003	0.904	0.029	0.0134	0.0002	0.154	0.008	< 0.3	0.05	0.0030	0.0003
IR05	CR 100W bridge, Ind.	12.0	06/26/99	09:00	7.2	0.0030	0.0002	0.977	0.013	0.0132	0.0004	0.149	0.007	0.46	0.07	0.0031	0.0010
IR06	Highway 41 bridge, Ind.	16.5	06/26/99	12:40	7.1	0.0034	0.0001	0.86	0.03	0.0135	0.0003	0.144	0.002	0.37	0.07	0.0037	0.0008
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/26/99	17:30	5.7	0.0036	0.0003	0.82	0.01	0.0141	0.0004	0.148	0.003	0.39	0.05	0.0041	0.0006
SUGAR CREEK																	
SC01	CR 400W bridge, Ind.	0.0	06/22/99	17:00	0.29	0.0066	0.0001	0.510	0.003	0.0106	0.0003	0.100	0.009	0.50	0.16	0.0055	0.0003
SC02	CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	0.0049	0.0000	0.572	0.001	0.0126	0.0002	0.116	0.005	0.65	0.15	0.0036	0.0011
SC03	Highway 71 bridge, Ind.	9.8	06/23/99	07:00	0.51	0.0053	0.0004	0.535	0.011	0.0144	0.0002	0.108	0.004	0.68	0.13	0.0060	0.0006
SC04	Stateline Rd. bridge, Ill. - Ind.	14.0	06/23/99	12:00	1.23	0.0042	0.0002	0.482	0.001	0.0137	0.0013	0.175	0.003	0.40	0.21	0.0056	0.0002
SC05	CR 3000E bridge, Ill.	17.7	06/23/99	16:30	1.27	0.0025	0.0002	0.521	0.009	0.0129	0.0008	0.120	0.005	0.40	0.31	0.0016	0.0009
SC06	CR 2800E bridge, Ill.	21.4	06/23/99	20:10	1.52	0.0028	0.0000	0.512	0.006	0.0141	0.0002	0.134	0.005	0.46	0.29	0.0039	0.0013
SC07	CR 900N bridge, Ill.	26.9	06/24/99	02:45	1.57	0.0026	0.0003	0.46	0.02	0.0126	0.0007	0.117	0.003	0.61	0.11	0.0029	0.0008
SC08	CR 2440E bridge, Ill.	30.1	06/24/99	06:25	1.91	0.0031	0.0002	0.47	0.02	0.0121	0.0005	0.112	0.004	0.57	0.03	0.0036	0.0004
SC09	Milford, Ill.	34.4	06/24/99	10:15	2.09	0.0033	0.0004	0.49	0.01	0.0111	0.0003	0.132	0.002	0.52	0.08	0.0039	0.0004
SC10	Above Mud Cr. #3, Ill.	37.8	06/24/99	14:10	2.22	0.0029	0.0002	0.52	0.01	0.0114	0.0005	0.160	0.003	0.53	0.08	0.0041	0.0004
SUGAR CREEK TRIBUTARIES																	
SCT1	Mud Cr. #1, Ind.	11.7	06/23/99	09:30	0.64	0.0048	0.0003	0.428	0.007	0.0139	0.0003	0.108	0.005	0.54	0.13	0.0047	0.0007
SCT2	Mud Cr. #2, Ill.	21.2	06/23/99	18:45	0.49	0.0035	0.0002	0.438	0.003	0.0088	0.0006	0.092	0.005	0.57	0.08	0.0033	0.0009
SCT3	Unnamed trib., Ill.	28.5	06/24/99	01:20	0.16	0.0029	0.0000	0.487	0.007	0.0081	0.0004	0.082	0.004	0.37	0.23	0.0037	0.0013

¹ More complete explanations of these are found in table 1.

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Sr µg/L	Avg	SD	Ta µg/L	Avg	SD	Tb µg/L	Avg	SD	Te µg/L	Avg	SD	Th µg/L	Avg	SD	Ti µg/L	Avg	SD
IROQUOIS RIVER																							
IR01	Highway 55 gage, Ind.	0.0	06/25/99	13:15	6.7	255	2	0.001	0.001	0.0006	0.0001	0.0006	0.0001	0.0004	0.0009	0.0000	0.0000	0.0009	0.0000	0.0000	<0.1	0.1	0.1
IR02	Highway 16 bridge, Ind.	2.0	06/25/99	16:00	6.8	255	5	0.001	0.000	0.0007	0.0001	0.0007	0.0001	0.013	0.006	0.0008	0.0002	0.0008	0.0002	0.0002	<0.1	0.1	0.1
IR03	Brook, Ind.	5.9	06/25/99	21:20	7.8	261	1	0.001	0.000	0.0004	0.0000	0.0004	0.0000	0.019	0.012	0.0011	0.0004	0.0011	0.0004	0.0004	<0.1	0.1	0.1
IR04	Meridian Rd. bridge, Ind.	9.4	06/26/99	03:15	8.1	246	0	<0.001	0.001	0.0006	0.0002	0.0006	0.0002	<0.01	0.001	0.0009	0.0004	0.0009	0.0004	0.0004	<0.1	0.0	0.0
IR05	CR 100W bridge, Ind.	12.0	06/26/99	09:00	7.2	224	1	<0.001	0.001	0.0005	0.0001	0.0005	0.0001	<0.01	0.001	0.0016	0.0000	0.0016	0.0000	0.0000	<0.07	0.08	0.08
IR06	Highway 41 bridge, Ind.	16.5	06/26/99	12:40	7.1	226	4	<0.004	0.002	0.0005	0.0001	0.0005	0.0001	<0.009	0.001	0.0011	0.0003	0.0011	0.0003	0.0003	0.08	0.07	0.07
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/26/99	17:30	5.7	236	8	<0.004	0.001	0.0007	0.0001	0.0007	0.0001	0.012	0.008	0.0012	0.0008	0.0012	0.0008	0.0008	<0.07	0.03	0.03
SUGAR CREEK																							
SC01	CR 400W bridge, Ind.	0.0	06/22/99	17:00	0.29	194	5	0.001	0.001	0.0010	0.0001	0.0010	0.0001	<0.01	0.006	0.0009	0.0002	0.0009	0.0002	0.0002	0.1	0.1	0.1
SC02	CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	179	2	0.001	0.000	0.0009	0.0001	0.0009	0.0001	<0.01	0.001	0.0006	0.0002	0.0006	0.0002	0.0002	<0.1	0.0	0.0
SC03	Highway 71 bridge, Ind.	9.8	06/23/99	07:00	0.51	170	1	0.002	0.001	0.0009	0.0002	0.0009	0.0002	0.018	0.001	0.0004	0.0001	0.0004	0.0001	0.0001	<0.1	0.1	0.1
SC04	Staline Rd. bridge, III.-Ind.	14.0	06/23/99	12:00	1.23	154	3	<0.001	0.001	0.0007	0.0002	0.0007	0.0002	<0.01	0.002	0.0010	0.0001	0.0010	0.0001	0.0001	<0.1	0.0	0.0
SC05	CR 3000E bridge, III.	17.7	06/23/99	16:30	1.27	152	2	<0.001	0.000	0.0002	0.0001	0.0002	0.0001	<0.01	0.011	0.0007	0.0003	0.0007	0.0003	0.0003	0.1	0.0	0.0
SC06	CR 2800E bridge, III.	21.4	06/23/99	20:10	1.52	149	5	0.002	0.001	0.0005	0.0001	0.0005	0.0001	<0.01	0.004	0.0007	0.0003	0.0007	0.0003	0.0003	<0.07	0.04	0.04
SC07	CR 900N bridge, III.	26.9	06/24/99	02:45	1.57	139	2	<0.004	0.001	0.0005	0.0001	0.0005	0.0001	0.011	0.007	0.0005	0.0002	0.0005	0.0002	0.0002	<0.07	0.02	0.02
SC08	CR 2440E bridge, III.	30.1	06/24/99	06:25	1.91	138	0	<0.004	0.001	0.0005	0.0001	0.0005	0.0001	0.012	0.005	0.0006	0.0001	0.0006	0.0001	0.0001	<0.07	0.03	0.03
SC09	Milford, III.	34.4	06/24/99	10:15	2.09	137	3	<0.004	0.002	0.0005	0.0001	0.0005	0.0001	0.012	0.003	0.0007	0.0001	0.0007	0.0001	0.0001	<0.07	0.06	0.06
SC10	Above Mud Cr. #3, III.	37.8	06/24/99	14:10	2.22	138	1	<0.004	0.001	0.0007	0.0001	0.0007	0.0001	0.014	0.005	0.0007	0.0002	0.0007	0.0002	0.0002	<0.1	0.1	0.1
SUGAR CREEK TRIBUTARIES																							
SCT1	Mud Cr. #1, Ind.	11.7	06/23/99	09:30	0.64	132	1	<0.001	0.000	0.0009	0.0002	0.0009	0.0002	<0.01	0.007	0.0006	0.0001	0.0006	0.0001	0.0001	<0.1	0.1	0.1
SCT2	Mud Cr. #2, III.	21.2	06/23/99	18:45	0.49	138	3	<0.001	0.001	0.0006	0.0002	0.0006	0.0002	<0.01	0.006	0.0007	0.0003	0.0007	0.0003	0.0003	<0.1	0.0	0.0
SCT3	Unnamed trib., III.	28.5	06/24/99	01:20	0.16	143	3	<0.001	0.001	0.0005	0.0001	0.0005	0.0001	0.012	0.006	0.0003	0.0002	0.0003	0.0002	0.0002	<0.1	0.1	0.1

¹ More complete explanations of these are found in table 1.

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Tl µg/L		Tm µg/L		U µg/L		V µg/L		W µg/L		Y µg/L	
						Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER																	
IR01	Highway 55 gage, Ind.	0.0	06/25/99	13:15	6.7	0.011	0.000	0.0009	0.0000	1.90	0.05	0.71	0.12	0.006	0.000	0.0417	0.0007
IR02	Highway 16 bridge, Ind.	2.0	06/25/99	16:00	6.8	0.015	0.002	0.0006	0.0000	1.85	0.08	0.89	0.10	0.008	0.002	0.0396	0.0024
IR03	Brook, Ind.	5.9	06/25/99	21:20	7.8	0.013	0.004	0.0008	0.0003	1.83	0.09	0.95	0.10	0.006	0.001	0.0419	0.0005
IR04	Meridian Rd. bridge, Ind.	9.4	06/26/99	03:15	8.1	0.012	0.003	0.0007	0.0000	1.77	0.06	0.97	0.20	0.007	0.003	0.0388	0.0015
IR05	CR 100W bridge, Ind.	12.0	06/26/99	09:00	7.2	0.015	0.003	0.0007	0.0001	1.66	0.02	1.00	0.05	0.012	0.000	0.0375	0.0024
IR06	Highway 41 bridge, Ind.	16.5	06/26/99	12:40	7.1	0.011	0.001	0.0007	0.0001	1.69	0.05	0.90	0.13	0.034	0.004	0.0425	0.0022
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/26/99	17:30	5.7	0.010	0.000	0.0008	0.0001	1.81	0.03	0.95	0.13	0.008	0.000	0.0420	0.0006
SUGAR CREEK																	
SC01	CR 400W bridge, Ind.	0.0	06/22/99	17:00	0.29	0.007	0.000	0.0007	0.0002	2.14	0.08	0.39	0.07	0.017	0.001	0.0552	0.0015
SC02	CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	0.009	0.000	0.0003	0.0000	2.24	0.09	0.38	0.06	0.003	0.002	0.0384	0.0009
SC03	Highway 71 bridge, Ind.	9.8	06/23/99	07:00	0.51	0.012	0.002	0.0004	0.0001	2.34	0.12	0.42	0.15	0.005	0.001	0.0453	0.0005
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	06/23/99	12:00	1.23	0.011	0.000	0.0005	0.0002	2.06	0.09	0.39	0.01	0.005	0.001	0.0448	0.0014
SC05	CR 3000E bridge, Ill.	17.7	06/23/99	16:30	1.27	0.012	0.003	0.0002	0.0000	2.17	0.07	0.41	0.08	0.004	0.002	0.0231	0.0008
SC06	CR 2800E bridge, Ill.	21.4	06/23/99	20:10	1.52	0.014	0.004	0.0003	0.0001	2.01	0.09	0.47	0.18	0.022	0.000	0.0296	0.0016
SC07	CR 900N bridge, Ill.	26.9	06/24/99	02:45	1.57	0.013	0.000	0.0003	0.0001	1.88	0.03	<0.3	0.1	0.006	0.002	0.0268	0.0014
SC08	CR 2440E bridge, Ill.	30.1	06/24/99	06:25	1.91	0.013	0.000	0.0004	0.0000	1.80	0.07	0.33	0.12	0.005	0.002	0.0339	0.0015
SC09	Milford, Ill.	34.4	06/24/99	10:15	2.09	0.014	0.002	0.0003	0.0001	1.75	0.08	0.41	0.12	0.012	0.000	0.0365	0.0016
SC10	Above Mud Cr. #3, Ill.	37.8	06/24/99	14:10	2.22	0.015	0.002	0.0004	0.0001	1.65	0.02	0.51	0.19	0.007	0.001	0.0366	0.0017
SUGAR CREEK TRIBUTARIES																	
SCT1	Mud Cr. #1, Ind.	11.7	06/23/99	09:30	0.64	0.011	0.003	0.0005	0.0001	1.82	0.01	0.35	0.13	0.003	0.001	0.0497	0.0009
SCT2	Mud Cr. #2, Ill.	21.2	06/23/99	18:45	0.49	0.011	0.001	0.0003	0.0002	1.06	0.07	0.27	0.07	0.005	0.001	0.0361	0.0011
SCT3	Unnamed trib., Ill.	28.5	06/24/99	01:20	0.16	0.011	0.001	0.0003	0.0000	1.00	0.02	0.25	0.14	0.016	0.003	0.0341	0.0004

¹ More complete explanations of these are found in table 1.

Table A13. Concentrations of trace elements in composite samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Yb µg/L Avg SD	Zn µg/L Avg SD	Zr µg/L Avg SD
IROQUOIS RIVER								
IR01	Highway 55 gage, Ind.	0.0	06/25/99	13:15	6.7	0.0061 0.0003	1.52 0.10	0.078 0.006
IR02	Highway 16 bridge, Ind.	2.0	06/25/99	16:00	6.8	0.0065 0.0007	6.52 0.13	0.074 0.004
IR03	Brook, Ind.	5.9	06/25/99	21:20	7.8	0.0067 0.0014	2.47 0.01	0.091 0.001
IR04	Meridian Rd. bridge, Ind.	9.4	06/26/99	03:15	8.1	0.0064 0.0001	0.69 0.16	0.092 0.003
IR05	CR 100W bridge, Ind.	12.0	06/26/99	09:00	7.2	0.0073 0.0008	0.66 0.12	0.083 0.011
IR06	Highway 41 bridge, Ind.	16.5	06/26/99	12:40	7.1	0.0062 0.0004	0.72 0.05	0.079 0.006
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/26/99	17:30	5.7	0.0061 0.0003	0.54 0.09	0.076 0.008
SUGAR CREEK								
SC01	CR 400W bridge, Ind.	0.0	06/22/99	17:00	0.29	0.0029 0.0003	2.94 0.23	0.032 0.002
SC02	CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	0.0027 0.0004	2.03 0.33	0.029 0.003
SC03	Highway 71 bridge, Ind.	9.8	06/23/99	07:00	0.51	0.0033 0.0001	2.41 0.09	0.027 0.000
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	06/23/99	12:00	1.23	0.0028 0.0007	1.51 0.16	0.033 0.000
SC05	CR 3000E bridge, Ill.	17.7	06/23/99	16:30	1.27	0.0021 0.0004	1.13 0.09	0.025 0.009
SC06	CR 2800E bridge, Ill.	21.4	06/23/99	20:10	1.52	0.0020 0.0003	1.10 0.12	0.018 0.002
SC07	CR 900N bridge, Ill.	26.9	06/24/99	02:45	1.57	0.0014 0.0003	1.22 0.02	0.016 0.002
SC08	CR 2440E bridge, Ill.	30.1	06/24/99	06:25	1.91	0.0025 0.0003	0.67 0.36	0.019 0.004
SC09	Milford, Ill.	34.4	06/24/99	10:15	2.09	0.0021 0.0003	1.11 0.03	0.022 0.001
SC10	Above Mud Cr. #3, Ill.	37.8	06/24/99	14:10	2.22	0.0028 0.0005	0.41 0.04	0.021 0.003
SUGAR CREEK TRIBUTARIES								
SCT1	Mud Cr. #1, Ind.	11.7	06/23/99	09:30	0.64	0.0028 0.0005	0.59 0.27	0.033 0.002
SCT2	Mud Cr. #2, Ill.	21.2	06/23/99	18:45	0.49	0.0017 0.0003	7.82 0.21	0.016 0.002
SCT3	Unnamed trib., Ill.	28.5	06/24/99	01:20	0.16	0.0023 0.0001	0.77 0.08	0.019 0.003

¹ More complete explanations of these are found in table 1.

Table A 14. Bacterial cell counts and chlorophyll-a concentrations in composite samples collected on the Lagrangian trip of June 1999.

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; mL, milliliters; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Bacterial Cell Counts millions/mL	Chlorophyll-a concentrations µg/L
IROQUOIS RIVER							
IR01	Highway 55 gage, Ind.	0.0	06/25/99	13:15	6.7	1.8	12.3
IR02	Highway 16 bridge, Ind.	2.0	06/25/99	16:00	6.8	0.46	9.9
IR03	Brook, Ind.	5.9	06/25/99	21:20	7.8	1.5	8.8
IR04	Meridian Rd. bridge, Ind.	9.4	06/26/99	03:15	8.1	1.5	7.2
IR05	CR 100W bridge, Ind.	12.0	06/26/99	09:00	7.2	1.2	7.1
IR06	Highway 41 bridge, Ind.	16.5	06/26/99	12:40	7.1	0.91	11.5
IR07	Newton Co. Fairgrounds, Ind.	21.1	06/26/99	17:30	5.7	0.81	10.8
SUGAR CREEK							
SC01	CR 400W bridge, Ind.	0.0	06/22/99	17:00	0.29	na	4.0
SC02	CR 600W bridge, Ind.	4.5	06/22/99	23:10	0.37	1.3	10.5
SC03	Highway 71 bridge, Ind.	9.8	06/23/99	07:00	0.51	0.86	8.5
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	06/23/99	12:00	1.23	1.3	3.9
SC05	CR 3000E bridge, Ill.	17.7	06/23/99	16:30	1.27	1.9	na
SC06	CR 2800E bridge, Ill.	21.4	06/23/99	20:10	1.52	2.0	2.2
SC07	CR 900N bridge, Ill.	26.9	06/24/99	02:45	1.57	2.7	4.0
SC08	CR 2440E bridge, Ill.	30.1	06/24/99	06:25	1.91	1.4	5.5
SC09	Milford, Ill.	34.4	06/24/99	10:15	2.09	0.96	4.7
SC10	Above Mud Cr. #3, Ill.	37.8	06/24/99	14:10	2.22	2.5	5.5
SUGAR CREEK TRIBUTARIES							
SCT1	Mud Cr. #1, Ind.	11.7	06/23/99	09:30	0.64	0.58	3.8
SCT2	Mud Cr. #2, Ill.	21.2	06/23/99	18:45	0.49	2.6	1.4
SCT3	Unnamed trib., Ill.	28.5	06/24/99	01:20	0.16	2.1	4.7

¹ More complete explanations of these are found in table 1.

Table A15. Concentrations of nutrients, dissolved nitrous oxide, dissolved organic carbon (DOC), and suspended sediment in grab samples collected on the Lagrangian trip of June 1999.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; mg/L, milligrams per liter; m, meter; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	NO ₃ mg N/L		NO ₂ mg N/L		NH ₄ mg N/L		Kjeldahl N mg N/L		N ₂ O mg N/L	
							Avg	SD	Avg	SD	Avg	SD	Value	Avg	SD	
IROQUOIS RIVER																
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	4.95	0.22	0.047	0.001	0.034	0.009	0.61	0.00127	0.00002	
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	4.70	0.16	0.046	0.001	0.030	0.005	0.49	na	na	
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	4.62	0.12	0.045	0.001	0.033	0.005	0.51	0.00129	0.00002	
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	4.70	0.17	0.045	0.001	0.030	0.002	0.55	na	na	
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	4.44	0.22	0.047	0.001	0.033	0.002	0.55	0.00139	0.00005	
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	4.49	0.15	0.049	0.000	0.037	0.001	0.58	0.00145	0.00003	
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	5.00	0.15	0.055	0.001	0.039	0.007	0.55	0.00151	0.00004	
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	5.34	0.29	0.059	0.001	0.029	0.002	0.60	0.00146	0.00004	
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	4.90	0.24	0.054	0.001	0.018	0.014	0.57	0.00162	0.00005	
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	4.81	0.22	0.048	0.001	0.021	0.002	0.53	0.00148	0.00005	
SUGAR CREEK																
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	7.68	0.14	0.039	0.001	0.018	0.004	0.36	0.00135	0.00003	
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	7.92	0.18	0.048	0.002	0.018	0.001	0.31	0.00181	0.00003	
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	7.64	0.08	0.043	0.002	0.008	0.003	0.24	0.00145	0.00005	
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	06/23/99	12:00	1.23	8.59	0.14	0.034	0.000	0.009	0.004	0.26	0.00098	0.00001	
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	8.28	0.12	0.034	0.000	0.005	0.005	0.26	0.00100	0.00003	
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	8.32	0.11	0.029	0.000	0.010	0.001	0.26	0.00104	0.00005	
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	8.68	0.16	0.029	0.001	0.008	0.004	0.26	0.00104	0.00002	
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	8.83	0.12	0.032	0.001	0.011	0.001	0.26	0.00125	0.00003	
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	8.34	0.13	0.030	0.000	0.027	0.001	0.32	0.00128	0.00006	
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	8.18	0.20	0.030	0.001	0.028	0.003	0.31	0.00136	0.00003	
SUGAR CREEK TRIBUTARIES																
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	10.16	0.43	0.032	0.001	0.014	0.001	0.28	0.00115	0.00006	
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	11.77	0.23	0.046	0.001	0.010	0.002	0.25	0.00130	0.00006	
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	12.49	0.42	0.068	0.001	0.025	0.001	0.31	0.00168	0.00006	

¹ More complete explanations of these are found in table 1 and 2.

² Location is the position within the channel where the grab sample was collected.

Table A15. Concentrations of nutrients, dissolved nitrous oxide, dissolved organic carbon (DOC), and suspended sediment in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; mg/L, milligrams per liter; m, meter; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	PO ₄ mg P/L		P mg/L		DOC mg C/L		Suspended Sediment mg/L Value
							Avg	SD	Avg	SD	Avg	SD	
IROQUOIS RIVER													
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	0.023	0.005	0.044	0.004	6.04	0.45	57
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	0.026	0.007	0.046	0.003	6.24	0.39	94
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	0.020	0.010	0.044	0.004	6.30	0.39	58
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	0.022	0.010	0.032	0.002	4.37	0.16	na
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	0.023	0.004	0.041	0.004	5.94	0.45	25
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	0.021	0.003	0.047	0.003	6.06	0.29	32
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	0.017	0.019	0.048	0.003	5.89	0.16	43
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	0.027	0.010	0.045	0.004	6.18	0.32	47
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	0.021	0.011	0.048	0.005	6.00	0.31	54
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	0.036	0.005	0.050	0.005	5.88	0.34	39
SUGAR CREEK													
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	< 0.02	0.01	< 0.002	0.002	2.32	0.13	na
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	< 0.02	0.01	0.003	0.002	2.41	0.06	14
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	< 0.02	0.00	< 0.002	0.002	na	na	13
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	06/23/99	12:00	1.23	< 0.02	0.00	< 0.002	0.001	na	na	10
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	< 0.02	0.00	< 0.002	0.001	2.12	0.03	5
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	< 0.02	0.00	< 0.002	0.001	na	na	16
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	< 0.02	0.00	< 0.002	0.001	na	na	14
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	< 0.02	0.01	< 0.002	0.002	2.49	0.11	28
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	< 0.02	0.01	0.013	0.000	2.14	0.10	34
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	< 0.02	0.01	0.014	0.001	2.31	0.12	49
SUGAR CREEK TRIBUTARIES													
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	< 0.02	0.01	0.006	0.001	2.28	0.10	42
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	< 0.02	0.00	< 0.002	0.001	2.18	0.16	5
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	< 0.02	0.01	0.012	0.002	na	na	20

¹ More complete explanations of these are found in table 1 and 2.

² Location is the position within the channel where the grab sample was collected.

Table A16. Concentrations of major ions in grab samples collected on the Lagrangian trip of June 1999.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	Cl mg/L	SO ₄ mg/L	HCO ₃ + CO ₃ mg C/L	Br µg/L				
IROQUOIS RIVER														
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	25.1	1.5	62.9	1.2	47.9	0.1	8.8	1.3
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	25.2	1.7	63.8	1.1	47.7	0.3	8.7	1.4
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	25.3	1.7	64.5	1.1	47.7	0.1	8.5	1.1
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	25.5	1.6	65.4	0.4	38.6	0.2	23	6
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	25.0	0.5	59.5	0.6	46.4	0.1	8.1	1.5
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	25.6	0.5	61.3	0.9	47.2	0.2	8.4	1.7
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	25.0	0.8	55.5	0.2	45.6	0.4	7.1	1.2
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	24.3	1.0	51.9	1.0	44.6	0.1	7.5	1.3
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	24.0	0.6	54.6	0.9	45.5	0.0	8.0	0.9
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	25.2	1.0	55.6	0.2	45.8	0.1	8.2	1.8
SUGAR CREEK														
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	18.0	na	52.5	na	46.9	0.0	9	2
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	19.9	na	54.6	na	48.4	0.1	7	2
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	18.3	na	59.1	na	50	na	8	4
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	06/23/99	12:00	1.23	20.1	na	61.3	na	47	na	12	4
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	19.8	na	63.0	na	43.6	0.1	7	4
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	20.0	na	65.7	na	47	na	7	4
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	20.3	na	62.1	na	46	na	14	4
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	19.9	na	59.3	na	44.7	0.5	15	4
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	20.4	na	56.9	na	44.5	0.3	25	6
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	20.6	na	57.1	na	43.7	0.1	22	9
SUGAR CREEK TRIBUTARIES														
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	21.0	na	59.6	na	45.6	0.2	16	5
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	21.9	na	47.1	na	43.0	0.1	13	6
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	22.4	na	43.6	na	46	na	13	6

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A16. Concentrations of major ions in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	Na mg/L	K mg/L	Mg mg/L	Ca mg/L	SiO ₂ mg/L					
IROQUOIS RIVER																
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	9.8	0.2	1.9	0.1	21	1	71	3	6.0	0.3
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	9.7	0.2	2.0	0.1	21	0	73	0	6.2	0.1
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	9.9	0.1	1.9	0.2	21	1	74	0	6.2	0.0
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	9.4	0.1	1.9	0.0	23	1	73	0	6.3	0.2
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	9.1	0.2	2.0	0.1	20	1	70	1	6.2	0.1
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	9.6	0.1	2.0	0.1	21	0	72	0	6.4	0.0
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	8.8	0.2	2.0	0.1	20	0	69	2	6.6	0.2
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	8.5	0.5	2.2	0.2	19	1	67	3	6.9	0.3
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	8.7	0.4	2.0	0.2	20	1	68	2	6.8	0.1
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	9.1	0.2	1.9	0.1	20	1	69	1	6.6	0.0
SUGAR CREEK																
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	6.5	0.1	0.96	0.01	28	0	77	1	6.4	0.1
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	7.4	0.3	0.98	0.02	28	0	75	0	5.3	0.1
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	6.4	0.1	1.0	0.0	28	0	77	1	4.2	0.1
SC04	Stateline Rd. bridge, Ill. -Ind.	14.0	COF	06/23/99	12:00	1.23	6.6	0.0	1.1	0.0	29	0	78	1	5.5	0.1
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	6.6	0.0	1.1	0.0	28	0	73	1	4.7	0.0
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	6.2	0.2	1.1	0.1	29	1	72	1	4.8	0.2
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	6.0	0.2	1.1	0.0	28	0	70	1	3.8	0.2
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	5.9	0.2	1.0	0.1	28	0	69	1	4.0	0.1
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	6.5	0.3	1.1	0.0	28	1	69	0	4.4	0.1
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	6.4	0.3	1.1	0.0	27	1	67	0	4.4	0.1
SUGAR CREEK TRIBUTARIES																
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	5.8	0.1	0.98	0.03	27	1	76	1	6.6	0.2
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	5.9	0.1	0.83	0.04	28	0	62	0	5.1	0.2
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	6.7	0.2	1.0	0.0	32	1	67	2	6.0	0.2

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999.

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L			
IROQUOIS RIVER														
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	1.99	0.08	54	3	64.1	0.8	<0.005	0.013
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	1.96	0.15	56	2	64.2	0.8	<0.005	0.008
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	2.11	0.16	55	4	64.1	1.1	<0.005	0.007
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	1.92	0.11	53	0	58.5	1.6	<0.01	0.00
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	2.16	0.21	51	2	62.0	1.0	<0.005	0.021
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	1.82	0.19	54	2	61.7	1.3	<0.005	0.008
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	2.18	0.11	50	2	61.3	0.5	0.006	0.002
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	2.92	0.17	48	3	58.8	1.2	<0.005	0.010
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	2.00	0.03	48	1	58.2	1.7	<0.005	0.007
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	1.77	0.05	49	1	58.8	0.5	0.010	0.006
SUGAR CREEK														
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	1.81	0.24	52	0	55.0	1.0	<0.02	0.01
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	0.80	0.11	51	1	51.9	1.1	<0.02	0.01
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	1.16	0.13	48	1	50.0	0.4	<0.02	0.00
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	06/23/99	12:00	1.23	1.83	0.22	43	1	49.6	1.1	<0.02	0.00
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	1.58	0.09	45	2	46.4	1.0	<0.02	0.02
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	1.88	0.11	44	1	47.9	1.4	<0.02	0.00
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	1.23	0.12	45	1	44.2	0.5	<0.01	0.00
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	1.18	0.03	47	1	42.2	0.4	<0.01	0.00
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	1.81	0.04	49	2	42.0	1.1	<0.01	0.01
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	1.82	0.09	47	1	40.8	0.0	<0.01	0.01
SUGAR CREEK TRIBUTARIES														
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	2.53	0.18	32	1	50.5	0.8	<0.01	0.01
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	0.93	0.11	55	1	30.7	0.2	<0.01	0.00
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	1.26	0.09	62	1	34.6	0.6	<0.01	0.01

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	Bi µg/L		Cd µg/L		Ce µg/L		Co µg/L	
							Avg	SD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER														
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	0.0017	0.0018	0.010	0.001	0.0219	0.0003	0.077	0.014
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	0.0019	0.0002	0.011	0.001	0.0203	0.0002	0.081	0.013
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	0.0018	0.0011	0.024	0.002	0.0212	0.0006	0.080	0.011
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	0.0023	0.0008	0.010	0.004	0.0177	0.0011	0.171	0.013
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	0.0007	0.0003	0.015	0.001	0.0172	0.0009	0.079	0.007
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	0.0026	0.0018	0.011	0.002	0.0196	0.0005	0.098	0.011
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	0.0024	0.0012	0.012	0.002	0.0201	0.0006	0.087	0.011
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	0.0014	0.0002	0.012	0.001	0.0165	0.0005	0.085	0.012
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	0.0015	0.0005	0.020	0.002	0.0178	0.0008	0.091	0.012
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	0.0010	0.0003	0.008	0.001	0.0205	0.0004	0.095	0.005
SUGAR CREEK														
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	0.0028	0.0010	0.136	0.003	0.0267	0.0007	0.017	0.010
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	0.0020	0.0011	0.026	0.000	0.0236	0.0010	0.018	0.012
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	0.0033	0.0011	0.014	0.001	0.0229	0.0010	<0.004	0.018
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	06/23/99	12:00	1.23	0.0014	0.0008	0.019	0.001	0.0211	0.0009	<0.004	0.014
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	0.0023	0.0001	0.012	0.002	0.0109	0.0010	0.013	0.011
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	0.0008	0.0001	0.015	0.004	0.0117	0.0007	0.018	0.012
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	0.0018	0.0006	0.004	0.002	0.0116	0.0007	0.021	0.008
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	0.0013	0.0011	0.023	0.003	0.0172	0.0011	0.033	0.008
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	0.0010	0.0004	0.014	0.004	0.0143	0.0009	0.042	0.013
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	0.0015	0.0009	0.005	0.002	0.0159	0.0008	0.044	0.005
SUGAR CREEK TRIBUTARIES														
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	0.0020	0.0010	0.010	0.003	0.0255	0.0034	0.484	0.023
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	0.0019	0.0008	0.007	0.001	0.0135	0.0010	0.019	0.011
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	0.0022	0.0017	<0.002	0.001	0.0159	0.0015	0.048	0.008

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	Cr µg/L	Cs µg/L	Cu µg/L	Dy µg/L				
IROQUOIS RIVER														
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	<0.2	0.0	0.0014	0.0002	0.71	0.01	0.0054	0.0001
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	<0.2	0.0	0.0034	0.0007	0.72	0.01	0.0047	0.0007
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	<0.2	0.1	0.0048	0.0014	0.83	0.02	0.0049	0.0005
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	<0.4	0.1	<0.003	0.000	0.74	0.04	0.0041	0.0001
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	<0.2	0.0	0.0022	0.0012	0.78	0.02	0.0042	0.0005
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	<0.2	0.1	0.0045	0.0021	0.80	0.02	0.0047	0.0000
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	<0.2	0.1	0.0020	0.0014	0.83	0.03	0.0049	0.0000
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	<0.2	0.0	0.0054	0.0012	1.01	0.04	0.0043	0.0006
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	<0.2	0.1	0.0047	0.0010	1.01	0.01	0.0042	0.0001
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	<0.2	0.1	0.0027	0.0016	0.80	0.02	0.0046	0.0010
SUGAR CREEK														
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	<0.4	0.1	0.0024	0.0004	0.99	0.05	0.0055	0.0002
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	<0.4	0.2	0.0025	0.0014	0.47	0.07	0.0049	0.0004
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	<0.4	0.2	0.0047	0.0012	0.36	0.03	0.0046	0.0004
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	06/23/99	12:00	1.23	<0.4	0.1	0.0019	0.0010	0.48	0.02	0.0051	0.0008
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	<0.4	0.1	0.0018	0.0017	0.51	0.02	0.0026	0.0003
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	<0.4	0.1	0.0027	0.0023	0.54	0.02	0.0024	0.0005
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	<0.4	0.1	<0.003	0.001	0.54	0.01	0.0027	0.0004
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	<0.4	0.0	<0.003	0.001	0.47	0.04	0.0033	0.0004
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	<0.4	0.1	<0.003	0.002	0.54	0.04	0.0039	0.0002
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	<0.4	0.1	<0.003	0.001	0.56	0.04	0.0033	0.0004
SUGAR CREEK TRIBUTARIES														
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	<0.4	0.1	<0.003	0.001	0.54	0.03	0.0065	0.0008
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	<0.4	0.2	<0.003	0.002	0.57	0.01	0.0037	0.0003
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	<0.4	0.1	<0.003	0.001	0.49	0.03	0.0038	0.0005

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	Er µg/L Avg	Eu µg/L Avg	Fe µg/L Avg	Gd µg/L Avg	Hg ng/L Avg
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	0.0047	0.0005	0.0012	12	0
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	0.0044	0.0004	0.0011	11	0
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	0.0044	0.0007	0.0006	11	1
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	0.0041	0.0006	0.0005	10	0
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	0.0034	0.0001	0.0006	7.8	0.2
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	0.0036	0.0006	0.0015	11	1
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	0.0046	0.0004	0.0010	9.2	0.2
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	0.0045	0.0001	0.0010	6.3	0.1
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	0.0037	0.0004	0.0006	5.8	0.3
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	0.0042	0.0007	0.0006	7.7	0.8
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	0.0036	0.0005	0.0017	22	0
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	0.0028	0.0002	0.0010	14	0
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	0.0029	0.0002	0.0013	9.8	0.1
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	06/23/99	12:00	1.23	0.0030	0.0002	0.0009	4.2	0.2
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	0.0017	0.0001	0.0013	4.5	0.2
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	0.0023	0.0000	0.0006	3.8	0.2
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	0.0017	0.0006	0.0004	3.5	0.1
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	0.0029	0.0005	0.0004	2.7	0.2
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	0.0025	0.0001	0.0002	2.5	0.1
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	0.0033	0.0005	0.0006	2.4	0.1
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	0.0032	0.0002	0.0012	3.1	0.2
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	0.0034	0.0003	0.0002	4.5	0.2
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	0.0027	0.0001	0.0004	2.8	0.2

¹ More complete explanations of these are found in table I.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	Ho µg/L	Avg	SD	La µg/L	Avg	SD	Li µg/L	Avg	SD	Lu µg/L	Avg	SD	Mn µg/L	Avg	SD
IROQUOIS RIVER																					
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	0.0012	0.0002	0.0002	0.0145	0.0007	0.0007	4.12	0.05	0.0015	0.0001	0.0015	0.0001	22.6	0.6	0.6
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	0.0010	0.0001	0.0001	0.0133	0.0002	0.0002	4.10	0.04	0.0015	0.0003	0.0015	0.0003	19.2	0.3	0.3
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	0.0011	0.0002	0.0002	0.0139	0.0005	0.0005	4.17	0.14	0.0015	0.0002	0.0015	0.0002	22.8	0.2	0.2
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	0.0012	0.0003	0.0003	0.0129	0.0004	0.0004	4.40	0.17	0.0013	0.0001	0.0013	0.0001	22.7	1.0	1.0
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	0.0010	0.0001	0.0001	0.0113	0.0003	0.0003	3.68	0.05	0.0013	0.0001	0.0013	0.0001	24.5	0.3	0.3
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	0.0008	0.0000	0.0000	0.0131	0.0004	0.0004	3.96	0.04	0.0013	0.0003	0.0013	0.0003	29.6	0.3	0.3
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	0.0011	0.0001	0.0001	0.0133	0.0007	0.0007	3.55	0.13	0.0015	0.0001	0.0015	0.0001	15.3	0.5	0.5
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	0.0010	0.0002	0.0002	0.0114	0.0005	0.0005	3.48	0.13	0.0014	0.0003	0.0014	0.0003	18.8	0.6	0.6
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	0.0009	0.0002	0.0002	0.0115	0.0006	0.0006	3.62	0.04	0.0014	0.0001	0.0014	0.0001	26.1	0.5	0.5
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	0.0011	0.0001	0.0001	0.0128	0.0005	0.0005	3.76	0.15	0.0012	0.0001	0.0012	0.0001	32.0	0.3	0.3
SUGAR CREEK																					
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	0.0011	0.0002	0.0002	0.0192	0.0005	0.0005	4.39	0.21	0.0005	0.0001	0.0005	0.0001	21.2	0.0	0.0
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	0.0010	0.0001	0.0001	0.0176	0.0001	0.0001	4.50	0.05	0.0005	0.0000	0.0005	0.0000	21.5	0.4	0.4
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	0.0011	0.0003	0.0003	0.0167	0.0002	0.0002	4.09	0.50	0.0005	0.0001	0.0005	0.0001	24.2	0.3	0.3
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	06/23/99	12:00	1.23	0.0013	0.0002	0.0002	0.0155	0.0002	0.0002	3.65	0.24	0.0006	0.0001	0.0006	0.0001	11.8	0.2	0.2
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	0.0006	0.0001	0.0001	0.0090	0.0001	0.0001	3.64	0.07	0.0003	0.0001	0.0003	0.0001	8.24	0.30	0.30
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	0.0007	0.0002	0.0002	0.0096	0.0009	0.0009	3.72	0.17	0.0004	0.0001	0.0004	0.0001	5.00	0.20	0.20
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	0.0007	0.0001	0.0001	0.0097	0.0002	0.0002	3.61	0.05	0.0003	0.0001	0.0003	0.0001	3.6	0.2	0.2
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	0.0008	0.0001	0.0001	0.0128	0.0008	0.0008	3.71	0.15	0.0003	0.0000	0.0003	0.0000	10.4	0.6	0.6
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	0.0009	0.0001	0.0001	0.0121	0.0006	0.0006	3.67	0.10	0.0004	0.0000	0.0004	0.0000	8.1	0.3	0.3
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	0.0009	0.0001	0.0001	0.0127	0.0004	0.0004	3.57	0.13	0.0004	0.0001	0.0004	0.0001	6.9	0.1	0.1
SUGAR CREEK TRIBUTARIES																					
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	0.0014	0.0001	0.0001	0.0189	0.0002	0.0002	2.82	0.08	0.0008	0.0001	0.0008	0.0001	13.0	0.2	0.2
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	0.0008	0.0002	0.0002	0.0117	0.0003	0.0003	4.09	0.24	0.0003	0.0001	0.0003	0.0001	3.8	0.1	0.1
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	0.0008	0.0001	0.0001	0.0127	0.0009	0.0009	4.94	0.01	0.0003	0.0001	0.0003	0.0001	9.0	0.8	0.8

¹ More complete explanations of these are found in table I.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	Mo µg/L	Nd µg/L	Ni µg/L	Pb µg/L	Pr µg/L
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	4.88	0.0188	0.0006	0.026	0.0039
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	4.86	0.0164	0.0010	0.027	0.0038
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	4.95	0.0210	0.0007	0.030	0.0039
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	5.00	0.0147	0.0005	0.020	0.0030
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	4.80	0.0157	0.0011	0.026	0.0031
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	4.93	0.0179	0.0013	0.033	0.0035
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	4.56	0.0183	0.0023	0.041	0.0040
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	4.45	0.0131	0.0015	0.048	0.0029
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	4.78	0.0157	0.0009	0.024	0.0031
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	4.72	0.0180	0.0002	0.022	0.0034
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	4.57	0.0214	0.0013	0.172	0.0051
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	4.53	0.0203	0.0005	0.032	0.0045
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	4.39	0.0195	0.0011	0.024	0.0044
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	06/23/99	12:00	1.23	4.18	0.0183	0.0011	0.024	0.0044
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	4.27	0.0115	0.0014	0.016	0.0022
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	4.33	0.0106	0.0003	0.019	0.0025
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	4.21	0.0117	0.0006	0.017	0.0025
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	4.11	0.0171	0.0001	0.015	0.0034
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	4.05	0.0148	0.0010	0.017	0.0031
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	4.07	0.0155	0.0006	0.012	0.0034
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	3.77	0.0244	0.0027	0.053	0.0053
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	3.24	0.0134	0.0011	0.010	0.0031
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	3.70	0.0160	0.0007	0.008	0.0034

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	Rb µg/L	Avg	SD	Re µg/L	Avg	SD	Sb µg/L	Avg	SD	Se µg/L	Avg	SD	Sm µg/L	Avg	SD	Sr µg/L	Avg	SD
IROQUOIS RIVER																								
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	0.90	0.01	0.0155	0.0007	0.147	0.002	0.36	0.12	0.0047	0.0001	0.262	0.0001	0.0047	0.0001	0.0008	0.0001	0.262	0.0001
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	0.92	0.02	0.0166	0.0010	0.148	0.007	0.38	0.10	0.0036	0.0008	0.261	0.0008	0.0036	0.0008	0.0008	0.0008	0.261	0.0008
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	0.94	0.01	0.0157	0.0004	0.153	0.003	0.36	0.07	0.0041	0.0013	0.270	0.0013	0.0041	0.0013	0.0013	0.0013	0.270	0.0013
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	0.90	0.02	0.0136	0.0006	0.156	0.006	0.24	0.00	0.0038	0.0002	0.264	0.0002	0.0038	0.0002	0.0002	0.0002	0.264	0.0002
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	0.93	0.02	0.0144	0.0005	0.153	0.010	0.28	0.04	0.0036	0.0006	0.245	0.0006	0.0036	0.0006	0.0006	0.0006	0.245	0.0006
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	0.88	0.01	0.0152	0.0004	0.154	0.001	0.39	0.10	0.0039	0.0002	0.256	0.0002	0.0039	0.0002	0.0002	0.0002	0.256	0.0002
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	0.87	0.01	0.0156	0.0003	0.148	0.004	0.25	0.15	0.0044	0.0004	0.234	0.0004	0.0044	0.0004	0.0004	0.0004	0.234	0.0004
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	0.93	0.02	0.0138	0.0002	0.164	0.008	0.33	0.10	0.0041	0.0008	0.228	0.0008	0.0041	0.0008	0.0008	0.0008	0.228	0.0008
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	0.87	0.01	0.0138	0.0006	0.155	0.001	0.38	0.13	0.0038	0.0004	0.234	0.0004	0.0038	0.0004	0.0004	0.0004	0.234	0.0004
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	0.83	0.01	0.0151	0.0003	0.152	0.004	0.49	0.02	0.0034	0.0007	0.237	0.0007	0.0034	0.0007	0.0007	0.0007	0.237	0.0007
SUGAR CREEK																								
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	0.571	0.000	0.0119	0.0002	0.100	0.006	0.55	0.17	0.0052	0.0008	192	0.0008	0.0052	0.0008	0.0008	0.0008	192	0.0008
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	0.596	0.009	0.0120	0.0007	0.114	0.002	0.69	0.03	0.0047	0.0001	180	0.0001	0.0047	0.0001	0.0001	0.0001	180	0.0001
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	0.531	0.014	0.0129	0.0003	0.140	0.005	0.59	0.10	0.0044	0.0003	171	0.0003	0.0044	0.0003	0.0003	0.0003	171	0.0003
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	06/23/99	12:00	1.23	0.481	0.005	0.0144	0.0007	0.117	0.000	0.52	0.19	0.0046	0.0000	150	0.0000	0.0046	0.0000	0.0000	0.0000	150	0.0000
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	0.516	0.007	0.0135	0.0007	0.117	0.006	0.39	0.16	0.0025	0.0005	150	0.0005	0.0025	0.0005	0.0005	0.0005	150	0.0005
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	0.513	0.008	0.0139	0.0002	0.123	0.012	0.41	0.22	0.0022	0.0004	150	0.0004	0.0022	0.0004	0.0004	0.0004	150	0.0004
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	0.47	0.01	0.0120	0.0005	0.118	0.001	0.59	0.08	0.0021	0.0010	144	0.0010	0.0021	0.0010	0.0010	0.0010	144	0.0010
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	0.47	0.02	0.0116	0.0001	0.116	0.002	0.48	0.05	0.0048	0.0009	142	0.0009	0.0048	0.0009	0.0009	0.0009	142	0.0009
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	0.50	0.00	0.0107	0.0004	0.136	0.005	0.57	0.07	0.0043	0.0005	140	0.0005	0.0043	0.0005	0.0005	0.0005	140	0.0005
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	0.51	0.00	0.0112	0.0008	0.148	0.005	0.54	0.07	0.0043	0.0007	139	0.0007	0.0043	0.0007	0.0007	0.0007	139	0.0007
SUGAR CREEK TRIBUTARIES																								
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	0.42	0.00	0.0125	0.0007	0.107	0.002	0.68	0.03	0.0046	0.0006	131	0.0006	0.0046	0.0006	0.0006	0.0006	131	0.0006
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	0.42	0.02	0.0088	0.0004	0.091	0.005	0.82	0.07	0.0030	0.0008	135	0.0008	0.0030	0.0008	0.0008	0.0008	135	0.0008
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	0.47	0.01	0.0088	0.0004	0.080	0.003	0.59	0.03	0.0034	0.0003	136	0.0003	0.0034	0.0003	0.0003	0.0003	136	0.0003

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	Ta µg/L Avg SD	Tb µg/L Avg SD	Te µg/L Avg SD	Th µg/L Avg SD	Ti µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	<0.001 0.001	0.0007 0.0001	0.011 0.005	0.0009 0.0002	<0.1 0.1
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	<0.001 0.000	0.0007 0.0002	0.010 0.004	0.0010 0.0002	<0.1 0.0
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	<0.001 0.000	0.0007 0.0001	<0.009 0.003	0.0012 0.0004	<0.1 0.1
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	<0.004 0.001	0.0006 0.0001	0.011 0.007	0.0014 0.0005	<0.2 0.2
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	0.001 0.001	0.0006 0.0002	<0.009 0.004	0.0009 0.0002	<0.1 0.1
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	<0.001 0.001	0.0005 0.0002	0.011 0.007	0.0010 0.0002	<0.1 0.0
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	0.002 0.001	0.0007 0.0001	<0.009 0.004	0.0008 0.0001	<0.1 0.0
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	<0.001 0.000	0.0006 0.0002	<0.009 0.003	0.0011 0.0003	<0.1 0.2
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	<0.001 0.000	0.0007 0.0002	<0.009 0.001	0.0009 0.0000	<0.1 0.1
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	<0.001 0.000	0.0006 0.0003	0.010 0.009	0.0008 0.0001	<0.1 0.1
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	<0.001 0.000	0.0007 0.0000	0.011 0.004	0.0008 0.0001	<0.1 0.1
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	<0.001 0.000	0.0007 0.0002	<0.01 0.002	0.0006 0.0001	<0.1 0.1
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	<0.001 0.001	0.0006 0.0002	0.012 0.005	0.0005 0.0000	<0.1 0.1
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	06/23/99	12:00	1.23	0.001 0.001	0.0008 0.0001	<0.01 0.010	0.0007 0.0002	<0.1 0.1
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	<0.001 0.000	0.0004 0.0000	<0.01 0.004	0.0003 0.0001	<0.1 0.2
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	<0.001 0.001	0.0004 0.0001	<0.01 0.004	0.0005 0.0003	<0.2 0.1
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	<0.004 0.002	0.0004 0.0001	<0.009 0.003	0.0005 0.0001	<0.2 0.0
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	<0.004 0.000	0.0004 0.0000	0.012 0.001	0.0005 0.0002	<0.2 0.1
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	<0.004 0.002	0.0006 0.0003	<0.009 0.003	0.0004 0.0002	<0.2 0.1
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	<0.004 0.000	0.0006 0.0001	0.011 0.003	0.0007 0.0004	<0.2 0.1
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	<0.004 0.003	0.0007 0.0001	0.013 0.004	0.0007 0.0000	<0.2 0.1
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	<0.004 0.002	0.0005 0.0001	0.012 0.004	0.0007 0.0001	<0.2 0.1
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	<0.004 0.002	0.0007 0.0000	0.012 0.002	0.0006 0.0001	<0.2 0.1

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	TL µg/L Avg SD	Tm µg/L Avg SD	U µg/L Avg SD	V µg/L Avg SD	W µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	0.012 0.000	0.0009 0.0001	1.91 0.01	0.85 0.08	0.004 0.002
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	0.012 0.001	0.0008 0.0001	1.93 0.01	0.81 0.03	0.004 0.000
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	0.012 0.002	0.0006 0.0001	1.91 0.03	0.84 0.06	0.025 0.011
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	0.011 0.000	0.0007 0.0001	1.83 0.06	0.73 0.15	0.016 0.004
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	0.013 0.002	0.0008 0.0002	1.85 0.02	0.88 0.06	0.006 0.003
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	0.010 0.000	0.0008 0.0000	1.88 0.00	0.98 0.06	0.007 0.002
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	0.011 0.001	0.0009 0.0001	1.80 0.03	0.98 0.11	0.007 0.002
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	0.012 0.001	0.0007 0.0001	1.67 0.01	1.17 0.03	0.008 0.004
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	0.012 0.001	0.0007 0.0001	1.73 0.04	1.22 0.01	0.008 0.002
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	0.012 0.001	0.0008 0.0003	1.76 0.05	1.23 0.20	0.009 0.003
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	0.008 0.001	0.0004 0.0001	2.24 0.06	0.34 0.05	0.011 0.002
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	0.010 0.000	0.0005 0.0001	2.24 0.08	0.39 0.04	0.006 0.001
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	0.010 0.002	0.0005 0.0002	2.22 0.01	0.35 0.14	0.004 0.001
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	06/23/99	12:00	1.23	0.012 0.001	0.0005 0.0001	2.11 0.06	0.40 0.05	0.003 0.002
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	0.012 0.001	0.0002 0.0000	2.04 0.01	0.32 0.16	0.002 0.001
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	0.012 0.001	0.0002 0.0001	2.16 0.03	0.37 0.27	0.003 0.002
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	0.012 0.001	0.0002 0.0001	1.88 0.04	<0.3 0.1	0.006 0.002
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	0.012 0.001	0.0004 0.0000	1.75 0.06	0.27 0.10	0.005 0.001
SC09	Millford, Ill.	34.4	COF	06/24/99	10:15	2.09	0.012 0.001	0.0004 0.0001	1.72 0.06	0.37 0.13	0.013 0.002
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	0.013 0.000	0.0004 0.0001	1.71 0.09	0.42 0.13	0.008 0.003
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	0.011 0.001	0.0005 0.0000	1.78 0.06	0.28 0.12	0.010 0.001
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	0.013 0.001	0.0004 0.0000	1.06 0.05	<0.3 0.1	0.002 0.001
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	0.010 0.001	0.0004 0.0001	0.99 0.05	0.38 0.12	0.005 0.001

¹ More complete explanations of these are found in table I.

² Location is the position within the channel where the grab sample was collected.

Table A17. Concentrations of trace elements in grab samples collected on the Lagrangian trip of June 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	Y µg/L Avg SD	Yb µg/L Avg SD	Zn µg/L Avg SD	Zr µg/L Avg SD
IROQUOIS RIVER										
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	0.0438 0.0018	0.0072 0.0004	0.57 0.01	0.0786 0.0042
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	0.0421 0.0017	0.0066 0.0006	0.82 0.06	0.0875 0.0055
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	0.0430 0.0007	0.0073 0.0011	3.81 0.02	0.0912 0.0052
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	0.0414 0.0033	0.0061 0.0004	0.70 0.04	0.085 0.000
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	0.0388 0.0002	0.0079 0.0001	1.42 0.01	0.0793 0.0011
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	0.0412 0.0016	0.0057 0.0004	3.50 0.10	0.0816 0.0039
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	0.0415 0.0015	0.0075 0.0008	4.22 0.07	0.0778 0.0017
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	0.0381 0.0007	0.0064 0.0005	1.57 0.14	0.0967 0.0046
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	0.0392 0.0010	0.0059 0.0005	1.47 0.20	0.0736 0.0009
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	0.0414 0.0003	0.0062 0.0011	0.67 0.05	0.0726 0.0036
SUGAR CREEK										
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	0.0453 0.0012	0.0029 0.0004	6.16 0.14	0.030 0.001
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	0.0390 0.0015	0.0027 0.0001	2.66 0.16	0.024 0.002
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	0.0410 0.0017	0.0026 0.0002	1.68 0.09	0.032 0.009
SC04	Stateline Rd. bridge, Ill. - Ind.	14.0	COF	06/23/99	12:00	1.23	0.0464 0.0015	0.0030 0.0002	0.97 0.19	0.023 0.003
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	0.0227 0.0007	0.0020 0.0002	0.63 0.18	0.019 0.004
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	0.0279 0.0016	0.0016 0.0006	0.48 0.25	0.021 0.004
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	0.0260 0.0009	0.0019 0.0003	0.93 0.08	0.023 0.001
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	0.0361 0.0012	0.0025 0.0003	48.1 0.5	0.020 0.000
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	0.0378 0.0017	0.0025 0.0003	26.3 0.1	0.025 0.002
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	0.0381 0.0013	0.0021 0.0003	1.40 0.01	0.025 0.001
SUGAR CREEK TRIBUTARIES										
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	0.0568 0.0009	0.0037 0.0010	6.99 0.06	0.031 0.004
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	0.0334 0.0012	0.0020 0.0004	14.8 0.4	0.014 0.004
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	0.0349 0.0019	0.0021 0.0006	0.38 0.07	0.018 0.002

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A18. Field measurements for samples collected on the Lagrangian trip of June 1999.

[km, kilometers; Q, discharge; cms, cubic meters per second; °C, degrees Celsius; µS/cm, microsiemens per centimeter; mg/L, milligrams per liter; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	pH	Temperature °C	Specific Conductance µS/cm	Dissolved Oxygen mg/L
IROQUOIS RIVER										
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	7.69	23.3	592	7.3
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	7.80	23.4	591	7.5
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	7.82	23.5	591	7.8
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	7.86	23.7	593	8.0
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	7.89	24.4	588	7.9
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	7.89	24.3	598	7.3
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	7.92	23.9	583	7.0
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	7.90	23.6	563	6.6
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	7.85	24.6	575	6.8
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	7.84	25.1	587	6.5
SUGAR CREEK										
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	7.99	24.8	589	13.2
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	8.40	22.3	594	8.0
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	na	na	na	na
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	06/23/99	12:00	1.23	8.27	21.9	600	13.2
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	8.27	25.0	583	12.6
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	8.24	24.2	583	8.9
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	8.10	23.3	596	7.1
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	8.10	22.8	590	6.8
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	8.07	22.7	578	7.0
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	8.08	22.9	576	7.0
SUGAR CREEK TRIBUTARIES										
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	8.18	21.4	603	11.1
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	8.32	24.2	565	9.8
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	7.91	22.2	606	7.1

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A 19. Bacterial cell counts and chlorophyll-a concentrations in grab samples collected on the Lagrangian trip of June 1999.

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; mL, milliliters; m, meters; LEW, left edge of water (facing downstream); COF, center of flow; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Sample Location ²	Date	Time	Q cms	Bacterial Cell Counts millions/mL	Chlorophyll-a concentrations µg/L
IROQUOIS RIVER								
IR01	Highway 55 gage, Ind.	0.0	4m LEW	06/25/99	11:45	6.7	na	9.17
IR01	Highway 55 gage, Ind.	0.0	8m LEW	06/25/99	11:55	6.7	na	9.17
IR01	Highway 55 gage, Ind.	0.0	COF	06/25/99	12:00	6.7	1.85	12.9
IR01	Highway 55 gage, Ind.	0.0	20m LEW	06/25/99	11:45	6.7	na	7.54
IR02	Highway 16 bridge, Ind.	2.0	COF	06/25/99	16:00	6.8	1.67	8.47
IR03	Brook, Ind.	5.9	COF	06/25/99	21:20	7.8	na	8.89
IR04	Meridian Rd. bridge, Ind.	9.4	COF	06/26/99	03:15	8.1	1.26	6.08
IR05	CR 100W bridge, Ind.	12.0	COF	06/26/99	09:00	7.2	na	8.37
IR06	Highway 41 bridge, Ind.	16.5	COF	06/26/99	12:40	7.1	na	12.7
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	06/26/99	17:30	5.7	na	11.6
SUGAR CREEK								
SC01	CR 400W bridge, Ind.	0.0	COF	06/22/99	17:00	0.29	na	4.54
SC02	CR 600W bridge, Ind.	4.5	COF	06/22/99	23:10	0.37	na	5.71
SC03	Highway 71 bridge, Ind.	9.8	COF	06/23/99	07:00	0.51	1.70	8.54
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	06/23/99	12:00	1.23	na	3.50
SC05	CR 3000E bridge, Ill.	17.7	COF	06/23/99	16:30	1.27	na	2.56
SC06	CR 2800E bridge, Ill.	21.4	COF	06/23/99	20:10	1.52	na	2.27
SC07	CR 900N bridge, Ill.	26.9	COF	06/24/99	02:45	1.57	na	6.61
SC08	CR 2440E bridge, Ill.	30.1	COF	06/24/99	06:25	1.91	na	5.65
SC09	Milford, Ill.	34.4	COF	06/24/99	10:15	2.09	na	5.58
SC10	Above Mud Cr. #3, Ill.	37.8	COF	06/24/99	14:10	2.22	na	4.43
SUGAR CREEK TRIBUTARIES								
SCT1	Mud Cr. #1, Ind.	11.7	COF	06/23/99	09:30	0.64	na	3.00
SCT2	Mud Cr. #2, Ill.	21.2	COF	06/23/99	18:45	0.49	na	1.33
SCT3	Unnamed trib., Ill.	28.5	COF	06/24/99	01:20	0.16	na	3.46

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A20. Concentrations of nutrients, dissolved nitrous oxide, dissolved organic carbon (DOC), and suspended sediment in samples collected on the Lagrangian trip of September 1999.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; mg/L, milligrams per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	NO ₃ mg N/L	NO ₂ mg N/L	NH ₄ mg N/L	Kjeldahl N mg N/L	N ₂ O mg N/L				
						sec	Avg.	SD	Avg.	SD	Avg	SD			
IROQUOIS RIVER															
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.60	0.03	0.007	0.000	0.083	0.001	0.51	0.00086	0.00006
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	0.67	0.00	0.011	0.001	0.091	0.003	0.55	0.00099	0.00002
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.53	0.01	0.014	0.000	0.095	0.003	0.58	0.00114	0.00001
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.72	0.00	0.019	0.001	0.102	0.000	0.50	0.00147	0.00027
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	0.65	0.02	0.018	0.000	0.082	0.001	0.51	0.00079	0.00010
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	0.47	0.01	0.015	0.001	0.100	0.005	0.50	0.00085	0.00004
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	0.53	0.00	0.014	0.001	0.088	0.000	0.56	0.00093	0.00007
SUGAR CREEK															
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	0.15	0.01	0.006	0.000	0.033	0.002	0.22	0.00044	0.00004
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	0.95	0.01	0.073	0.000	0.098	0.001	0.32	0.00072	0.00002
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	0.99	0.03	0.024	0.001	< 0.007	0.002	0.23	0.00067	0.00005
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	0.72	0.01	0.009	0.001	< 0.007	0.000	0.34	0.00062	0.00002
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	0.50	0.01	0.008	0.000	< 0.007	0.001	0.14	0.00044	0.00003
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	0.77	0.03	0.006	0.000	< 0.007	0.001	0.12	0.00066	0.00000
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	0.63	0.01	0.006	0.000	0.008	0.000	0.23	0.00053	0.00004
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	0.52	0.00	0.006	0.000	< 0.007	0.003	0.26	0.00057	0.00001
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	0.45	0.01	0.006	0.000	0.032	0.004	0.30	0.00051	0.00003
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	0.40	0.00	0.006	0.000	0.013	0.001	0.18	0.00051	0.00000
SUGAR CREEK TRIBUTARIES															
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	0.04	0.01	0.002	0.000	< 0.007	0.002	0.23	0.00059	0.00011
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	1.01	0.01	0.027	0.001	0.018	0.000	0.47	0.00105	0.00002

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A20. Concentrations of nutrients, dissolved nitrous oxide, dissolved organic carbon (DOC), and suspended sediment in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; mg/L, milligrams per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms sec	PO ₄ mg P/L Avg. SD	P mg/L Avg. SD	DOC mg C/L Avg. SD	Suspended Sediment mg/L Value
IROQUOIS RIVER										
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.05 0.00	0.059 0.005	6.0 0.2	29
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	0.06 0.00	0.072 0.002	6.0 0.2	39
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.07 0.00	0.070 0.006	6.1 0.0	17
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.07 0.00	0.066 0.004	6.0 0.1	41
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	0.05 0.01	0.067 0.005	5.7 0.2	59
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	0.07 0.01	0.073 0.008	5.9 0.1	56
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	0.07 0.00	0.066 0.003	6.2 0.1	33
SUGAR CREEK										
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	< 0.02 0.00	0.019 0.005	2.8 0.1	< 5
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	0.04 0.00	0.046 0.007	2.8 0.0	< 5
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	0.03 0.00	< 0.007 0.001	2.4 0.0	< 5
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	< 0.02 0.00	< 0.007 0.002	2.3 0.2	47
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	< 0.02 0.00	< 0.007 0.003	2.2 0.2	< 5
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	< 0.02 0.00	< 0.007 0.008	na	14
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	< 0.02 0.00	< 0.007 0.005	2.5 0.0	11
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	< 0.02 0.00	< 0.007 0.005	2.4 0.1	36
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	< 0.02 0.00	0.017 0.005	2.8 0.0	12
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	< 0.02 0.00	0.021 0.005	2.8 0.1	na
SUGAR CREEK TRIBUTARIES										
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	< 0.02 0.00	< 0.007 0.001	2.1 0.3	17
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	< 0.02 0.00	0.009 0.006	3.4 0.0	45

¹ More complete explanations of these are found in table I.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A21. Concentrations of major ions in samples collected on the Lagrangian trip of September 1999.

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average, SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms sec	Cl mg/L Value	SO ₄ mg/L Value	HCO ₃ + CO ₃ mg C/L Avg.	SD	Br µg/L Avg	SD
IROQUOIS RIVER												
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	39	76	54	0	27	2
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	42	76	55	1	23	4
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	39	76	55	0	19	0
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	54	77	54	0	25	6
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	52	77	54	0	22	2
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	38	74	54	1	18	2
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	49	75	55	0	24	2
SUGAR CREEK												
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	15	100	58	0	16	4
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	21	87	57	0	14	2
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	17	104	56	0	17	3
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	20	111	56	1	16	0
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	20	117	48	0	17	2
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	19	114	49	na	15	1
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	18	115	48	0	14	2
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	19	110	50	0	15	1
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	22	108	53	0	17	1
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	23	107	51	0	21	0
SUGAR CREEK TRIBUTARIES												
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	21	106	52	2	21	3
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	13	100	52	0	22	2

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A21. Concentrations of major ions in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average, SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms sec	Na mg/L Avg. SD	K mg/L Avg. SD	Mg mg/L Avg. SD	Ca mg/L Avg. SD	SiO ₂ mg/L Avg. SD					
IROQUOIS RIVER																
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	23	0	3.1	0.1	26	0	76	1	7.8	0.2
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	25	1	3.2	0.0	26	0	76	2	8.0	0.2
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	25	1	3.1	0.2	26	1	74	3	7.9	0.2
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	29	1	3.3	0.2	27	1	77	2	7.9	0.3
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	26	1	3.2	0.1	26	1	74	1	7.8	0.2
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	26	1	3.1	0.0	28	1	78	6	8.6	0.5
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	25	1	2.9	0.1	25	1	74	1	8.3	0.2
SUGAR CREEK																
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	9.9	0.6	1.7	0.0	34	1	81	2	7.3	0.3
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	13	0	1.9	0.0	32	1	78	3	7.2	0.4
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	9.0	0.5	1.8	0.0	32	1	81	3	7.5	0.3
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	9.9	0.1	2.1	0.1	34	0	88	1	8.2	0.0
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	9.5	0.0	2.1	0.0	34	0	78	1	8.0	0.2
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	9.0	0.1	1.8	0.1	32	1	79	3	7.1	0.2
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	9.4	0.5	1.9	0.0	33	2	72	3	6.7	0.3
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	10	1	2.0	0.0	33	1	71	1	6.4	0.2
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	13	1	2.2	0.1	33	1	71	2	6.6	0.2
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	14	1	2.3	0.2	34	2	73	4	6.7	0.4
SUGAR CREEK TRIBUTARIES																
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	9.8	0.1	2.1	0.1	31	0	81	1	7.6	0.1
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	11	0	2.5	0.1	33	1	67	2	7.0	0.2

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999.

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms sec	Al µg/L Avg SD	As µg/L Avg SD	B µg/L Avg. SD	Ba µg/L Avg SD	Be µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	2.8 0.2	1.8 0.1	125 3	74 2	<0.008 0.004
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	1.6 0.1	1.8 0.1	126 3	75 4	<0.008 0.001
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	1.7 0.0	1.8 0.1	132 3	76 0	0.007 0.003
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	1.7 0.1	1.7 0.1	134 0	71 5	<0.008 0.001
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	2.9 0.0	1.7 0.0	121 4	77 2	0.007 0.005
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	1.4 0.1	1.7 0.0	130 1	76 1	<0.005 0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	1.4 0.2	1.8 0.1	114 2	75 2	<0.008 0.007
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	1.3 0.2	1.3 0.0	107 7	52 3	<0.01 0.00
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	0.8 0.2	1.2 0.0	96 7	51 2	<0.01 0.01
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	0.6 0.1	1.1 0.0	73 6	45 2	<0.01 0.00
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	0.8 0.2	0.88 0.03	62 0	50 1	<0.01 0.00
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	0.8 0.1	0.89 0.05	63 3	49 1	<0.01 0.00
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	0.9 0.1	0.74 0.01	67 2	48 2	<0.01 0.00
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	1.1 0.1	0.83 0.02	75 2	49 2	<0.01 0.01
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	1.1 0.2	0.92 0.05	79 3	51 2	<0.01 0.01
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	1.2 0.2	0.93 0.04	90 1	51 2	<0.01 0.00
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	1.1 0.2	0.98 0.01	90 3	51 2	<0.01 0.00
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	1.1 0.3	1.1 0.0	50 6	56 1	<0.008 0.004
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	0.5 0.1	1.0 0.0	132 0	33 2	<0.01 0.01

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms sec	Bi µg/L		Cd µg/L		Ce µg/L		Co µg/L	
							Avg	SD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER														
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.0007	0.0003	0.007	0.002	0.024	0.001	0.046	0.020
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	0.0012	0.0007	0.006	0.001	0.018	0.001	0.041	0.025
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	<0.002	0.002	0.004	0.000	0.020	0.000	0.048	0.002
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.0008	0.0005	0.009	0.002	0.018	0.000	0.061	0.002
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	<0.002	0.000	0.008	0.001	0.027	0.000	0.041	0.003
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	<0.002	0.001	0.008	0.000	0.024	0.000	0.018	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	<0.0004	0.0001	0.007	0.002	0.022	0.001	0.007	0.023
SUGAR CREEK														
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	<0.0008	0.0001	<0.002	0.002	0.019	0.001	<0.002	0.044
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	<0.0008	0.0006	<0.002	0.002	0.020	0.001	<0.002	0.001
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	0.0013	0.0005	<0.002	0.003	0.011	0.000	<0.002	0.032
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	<0.0008	0.0005	0.002	0.001	0.011	0.001	<0.002	0.005
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	<0.0008	0.0005	<0.002	0.002	0.011	0.001	<0.002	0.010
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	<0.0008	0.0003	<0.002	0.004	0.015	0.001	<0.002	0.013
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	<0.0008	0.0004	<0.002	0.003	0.016	0.000	<0.002	0.016
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	0.0009	0.0010	<0.002	0.003	0.019	0.000	<0.002	0.024
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	<0.0008	0.0001	<0.002	0.002	0.020	0.001	<0.002	0.012
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	<0.0008	0.0001	<0.002	0.003	0.019	0.001	<0.002	0.022
SUGAR CREEK TRIBUTARIES														
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	<0.0004	0.0005	0.009	0.005	0.014	0.001	<0.001	0.003
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	<0.0008	0.0005	<0.002	0.000	0.011	0.001	<0.002	0.035

¹ More complete explanations of these are found in table I.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms sec	Cr µg/L Avg SD	Cs µg/L Avg SD	Cu µg/L Avg SD	Dy µg/L Avg SD	Er µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	<0.4 0.0	<0.002 0.002	0.19 0.01	0.0046 0.0003	0.0034 0.0001
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	<0.4 0.1	<0.002 0.001	0.15 0.04	0.0036 0.0004	0.0032 0.0005
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	<0.1 0.0	0.0010 0.0003	0.7 0.0	0.0053 0.0001	0.0032 0.0002
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	<0.4 0.1	<0.002 0.000	1.5 0.0	0.0048 0.0003	0.0033 0.0007
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	<0.1 0.0	<0.0009 0.0002	1.7 0.0	0.0058 0.0003	0.0038 0.0002
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	<0.1 0.0	<0.0009 0.0003	1.8 0.0	0.0051 0.0003	0.0036 0.0002
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	<0.4 0.1	<0.002 0.002	0.63 0.02	0.0056 0.0001	0.0029 0.0002
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	<0.3 0.1	<0.005 0.001	0.58 0.05	0.0033 0.0003	0.0027 0.0008
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	<0.3 0.1	<0.005 0.001	0.69 0.05	0.0042 0.0003	0.0027 0.0006
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	<0.3 0.1	<0.005 0.001	0.61 0.06	0.0024 0.0005	0.0021 0.0005
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	<0.3 0.1	<0.005 0.001	0.67 0.05	0.0023 0.0005	0.0018 0.0001
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	<0.3 0.1	<0.005 0.001	2.5 0.0	0.0018 0.0003	0.0008 0.0006
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	<0.3 0.1	<0.005 0.006	1.4 0.0	0.0032 0.0001	0.0023 0.0005
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	<0.3 0.1	<0.005 0.001	2.0 0.0	0.0040 0.0002	0.0028 0.0002
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	<0.3 0.1	<0.005 0.001	2.0 0.1	0.0041 0.0001	0.0033 0.0004
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	<0.3 0.1	<0.005 0.001	3.0 0.0	0.0043 0.0010	0.0026 0.0001
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	<0.3 0.1	<0.005 0.001	2.8 0.1	0.0040 0.0003	0.0026 0.0004
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	<0.4 0.1	0.002 0.004	<0.05 0.02	0.0029 0.0002	0.0022 0.0004
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	<0.3 0.1	<0.005 0.001	1.8 0.0	0.0018 0.0004	0.0013 0.0001

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	Eu		Fe		Gd		Hg		Ho	
							Avg	SD	Avg.	SD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER																
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.0049	0.0001	14	0	0.0072	0.0002	2.2	0.1	0.0012	0.0001
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	0.0049	0.0006	8.6	0.3	0.0077	0.0002	0.5	0.2	0.0009	0.0000
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.0009	0.0001	5.8	0.2	0.0109	0.0001	0.7	0.2	0.0011	0.0003
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.0056	0.0013	3.7	0.2	0.0081	0.0006	1.0	0.1	0.0010	0.0001
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	0.0013	0.0002	8.1	0.2	0.0089	0.0010	2.6	0.2	0.0011	0.0001
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	0.0018	0.0002	4.1	0.5	0.0055	0.0002	41.2	0.3	0.0011	0.0001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	0.0046	0.0005	3.4	0.0	0.0056	0.0003	2.1	0.0	0.0012	0.0001
SUGAR CREEK																
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	0.0025	0.0011	12	0	0.0059	0.0000	7.2	0.0	0.0008	0.0002
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	0.0021	0.0002	13	0	0.0053	0.0003	0.8	0.2	0.0009	0.0001
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	0.0016	0.0008	17	1	0.0038	0.0004	0.4	0.0	0.0007	0.0001
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	0.0016	0.0002	12	0	0.0026	0.0003	0.5	0.0	0.0005	0.0001
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	0.0016	0.0006	6.1	0.0	0.0029	0.0005	1.0	0.2	0.0004	0.0001
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	0.0033	0.0005	6.1	0.6	0.0045	0.0002	0.7	0.2	0.0007	0.0002
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	0.0024	0.0014	3.2	0.4	0.0039	0.0010	1.6	0.1	0.0009	0.0001
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	0.0015	0.0006	4.2	0.0	0.0046	0.0005	0.8	0.1	0.0011	0.0001
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	0.0036	0.0003	3.3	0.1	0.0052	0.0001	0.9	0.0	0.0008	0.0001
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	0.0024	0.0005	2.9	0.2	0.0055	0.0004	0.4	0.2	0.0011	0.0001
SUGAR CREEK TRIBUTARIES																
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	0.0039	0.0002	13	0	0.0039	0.0010	0.5	0.2	0.0006	0.0001
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	0.0007	0.0012	14	0	0.0028	0.0003	2.1	0.1	0.0004	0.0001

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms sec	La µg/L Avg	Li µg/L Avg	Lu µg/L Avg	Mn µg/L Avg	Mo µg/L Avg	Nd µg/L Avg
IROQUOIS RIVER												
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.014	0.000	0.0007	0.0000	144	9
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	0.012	0.001	0.0008	0.0001	119	3
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.013	0.000	0.0007	0.0001	128	0
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.011	0.000	0.0008	0.0000	164	11
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	0.017	0.001	0.0010	0.0000	160	3
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	0.014	0.000	0.0009	0.0001	176	2
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	0.013	0.000	0.0009	0.0000	198	8
SUGAR CREEK												
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	0.015	0.000	0.0004	0.0001	31	1
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	0.014	0.001	0.0003	0.0000	62	1
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	0.0079	0.0007	0.0003	0.0000	23	1
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	0.0070	0.0003	0.0002	0.0000	24	0
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	0.0070	0.0004	0.0002	0.0001	27	0
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	0.010	0.000	0.0004	0.0001	26	0
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	0.010	0.000	0.0003	0.0000	26	1
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	0.014	0.000	0.0003	0.0001	61	1
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	0.013	0.000	0.0005	0.0001	68	1
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	0.013	0.001	0.0006	0.0000	45	1
SUGAR CREEK TRIBUTARIES												
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	0.0097	0.0000	0.0004	0.0001	75	5
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	0.0073	0.0001	0.0002	0.0001	76	2

¹ More complete explanations of these are found in table I.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	Ni		Pb		Pr		Rb		Re	
							µg/L		µg/L		µg/L		µg/L		µg/L	
							Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER																
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	2.4	0.3	0.041	0.003	0.0032	0.0001	1.3	0.2	0.013	0.000
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	2.0	0.4	0.027	0.005	0.0030	0.0001	1.4	0.2	0.012	0.000
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	2.2	0.0	0.029	0.002	0.0039	0.0002	1.3	0.0	0.012	0.001
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	2.4	0.6	0.016	0.004	0.0027	0.0005	1.2	0.1	0.013	0.000
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	1.8	0.2	0.034	0.001	0.0042	0.0001	1.2	0.0	0.012	0.000
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	1.7	0.2	0.024	0.002	0.0040	0.0001	1.1	0.0	0.013	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	1.9	0.2	0.021	0.005	0.0036	0.0001	0.97	0.11	0.013	0.000
SUGAR CREEK																
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	1.3	0.6	0.033	0.004	0.0037	0.0002	0.79	0.03	0.0035	0.0002
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	2.1	0.6	0.027	0.004	0.0037	0.0001	1.2	0.0	0.016	0.001
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	1.3	0.4	0.022	0.004	0.0023	0.0001	1.1	0.0	0.017	0.000
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	1.6	0.1	0.022	0.001	0.0016	0.0002	0.99	0.03	0.020	0.001
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	1.7	0.3	0.012	0.001	0.0017	0.0002	1.0	0.0	0.021	0.000
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	1.9	0.5	0.022	0.001	0.0027	0.0002	0.82	0.02	0.0072	0.0004
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	1.8	0.6	0.022	0.005	0.0028	0.0002	0.76	0.01	0.019	0.000
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	1.4	0.4	0.024	0.003	0.0029	0.0002	0.71	0.01	0.013	0.001
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	1.7	0.2	0.019	0.003	0.0031	0.0002	0.66	0.01	0.014	0.001
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	1.6	0.4	0.021	0.005	0.0033	0.0002	0.62	0.01	0.014	0.001
SUGAR CREEK TRIBUTARIES																
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	1.1	0.5	0.029	0.008	0.0025	0.0002	1.0	0.1	0.016	0.000
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	1.4	0.8	0.021	0.004	0.0018	0.0003	0.96	0.01	0.0069	0.0003

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q		Sb		Se		Sm		Sr		Ta	
						cms	sec	µg/L	SD	µg/L	SD	µg/L	SD	µg/L	SD	µg/L	SD
IROQUOIS RIVER																	
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.14	0.01	0.2	0.1	0.0042	0.0003	400	27	<0.0004	0.0002	
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	0.14	0.00	0.3	0.1	0.0040	0.0001	414	17	<0.0004	0.0003	
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.15	0.01	0.31	0.01	0.0039	0.0003	404	5	<0.001	0.001	
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.16	0.00	0.3	0.1	0.0031	0.0008	405	4	<0.0004	0.0003	
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	0.15	0.00	0.31	0.02	0.0053	0.0005	387	5	<0.001	0.001	
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	0.15	0.00	0.35	0.05	0.0042	0.0000	380	9	<0.001	0.000	
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	0.16	0.00	0.3	0.1	0.0037	0.0007	385	1	<0.0004	0.0002	
SUGAR CREEK																	
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	0.11	0.01	0.4	0.1	0.0032	0.0007	284	6	<0.001	0.000	
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	0.12	0.00	0.4	0.1	0.0045	0.0004	211	4	<0.001	0.001	
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	0.12	0.01	0.4	0.0	0.0027	0.0001	178	3	<0.001	0.001	
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	0.10	0.00	0.3	0.1	0.0018	0.0010	169	4	<0.001	0.000	
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	0.12	0.00	0.3	0.1	0.0019	0.0003	166	4	<0.001	0.001	
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	0.098	0.002	0.3	0.0	0.0030	0.0009	173	4	<0.001	0.000	
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	0.12	0.00	0.3	0.0	0.0042	0.0003	173	1	<0.001	0.000	
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	0.12	0.00	0.3	0.0	0.0040	0.0009	186	3	<0.001	0.001	
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	0.13	0.00	0.3	0.1	0.0043	0.0008	189	1	<0.001	0.000	
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	0.13	0.01	0.2	0.0	0.0040	0.0007	188	2	<0.001	0.001	
SUGAR CREEK TRIBUTARIES																	
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	0.10	0.01	0.3	0.1	0.0026	0.0004	171	3	<0.0004	0.0003	
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	0.098	0.003	0.2	0.0	0.0018	0.0002	207	2	<0.001	0.000	

¹ More complete explanations of these are found in table I.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms sec	Tb µg/L Avg SD	Te µg/L Avg SD	Th µg/L Avg SD	Ti µg/L Avg SD	Tl µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.0007 0.0000	0.014 0.003	0.0011 0.0001	<0.08 0.12	0.003 0.001
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	0.0006 0.0000	0.011 0.005	0.0012 0.0000	<0.08 0.10	0.007 0.001
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.0007 0.0001	0.012 0.000	0.0010 0.0002	<0.06 0.10	0.0045 0.0005
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.0006 0.0000	0.015 0.005	0.0013 0.0003	<0.08 0.09	0.007 0.002
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	0.0009 0.0000	<0.01 0.001	0.0013 0.0004	<0.06 0.11	0.0047 0.0003
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	0.0008 0.0000	<0.01 0.001	0.0010 0.0000	<0.06 0.11	0.0051 0.0008
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	0.0008 0.0001	0.011 0.006	0.0012 0.0003	<0.08 0.17	0.006 0.003
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	0.0006 0.0001	0.012 0.004	0.0016 0.0001	<0.09 0.25	0.0075 0.0003
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	0.0006 0.0001	0.017 0.001	0.0010 0.0001	<0.09 0.03	0.011 0.001
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	0.0004 0.0001	0.014 0.005	0.0010 0.0001	<0.09 0.31	0.019 0.003
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	0.0002 0.0000	0.014 0.002	0.0006 0.0001	<0.09 0.03	0.018 0.001
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	0.0003 0.0001	0.008 0.002	0.0005 0.0002	<0.09 0.19	0.020 0.001
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	0.0005 0.0001	0.013 0.001	0.0008 0.0001	<0.09 0.05	0.014 0.001
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	0.0005 0.0001	0.011 0.005	0.0006 0.0002	<0.09 0.19	0.014 0.001
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	0.0006 0.0001	<0.008 0.001	0.0011 0.0006	<0.09 0.15	0.012 0.002
SC09	Millford, Ill.	34.4	09/16/99	09:20	Grab	0.162	0.0005 0.0000	0.011 0.005	0.0008 0.0003	<0.09 0.12	0.0083 0.0005
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	0.0006 0.0001	0.018 0.005	0.0011 0.0005	<0.09 0.26	0.0077 0.0004
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	0.0004 0.0000	0.017 0.001	0.0011 0.0003	<0.08 0.15	0.019 0.003
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	0.0003 0.0000	0.011 0.003	0.0012 0.0005	<0.09 0.37	0.016 0.001

¹ More complete explanations of these are found in table I.² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q		Tm		U		V		W		Y	
						cms	sec	Avg	SD	µg/L	Avg	SD	µg/L	Avg	SD	µg/L	Avg
IROQUOIS RIVER																	
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.0006	0.0000	1.2	0.0	1.2	0.2	0.008	0.001	0.043	0.007	0.007
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	0.0003	0.0000	1.1	0.0	1.1	0.1	0.005	0.001	0.039	0.005	0.005
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.0005	0.0001	1.2	0.0	1.1	0.0	0.020	0.000	0.044	0.004	0.004
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.0006	0.0000	1.2	0.0	1.2	0.1	0.007	0.002	0.043	0.006	0.006
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	0.0007	0.0001	1.2	0.0	1.1	0.1	0.005	0.002	0.049	0.001	0.001
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	0.0007	0.0002	1.2	0.0	1.2	0.1	0.004	0.000	0.046	0.000	0.000
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	0.0006	0.0001	1.3	0.0	1.3	0.1	0.008	0.000	0.044	0.007	0.007
SUGAR CREEK																	
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	0.0003	0.0001	3.3	0.0	0.48	0.08	0.003	0.000	0.043	0.002	0.002
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	0.0003	0.0000	3.3	0.1	0.41	0.04	0.009	0.002	0.037	0.001	0.001
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	< 0.0002	0.0001	3.0	0.1	0.19	0.01	0.002	0.001	0.025	0.001	0.001
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	< 0.0002	0.0000	2.9	0.1	< 0.1	0.04	< 0.001	0.001	0.023	0.001	0.001
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	< 0.0002	0.0001	3.3	0.0	< 0.1	0.07	0.003	0.001	0.015	0.000	0.000
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	0.0003	0.0000	2.9	0.1	< 0.1	0.01	0.004	0.001	0.032	0.000	0.000
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	0.0004	0.0000	2.8	0.1	0.27	0.03	0.002	0.001	0.037	0.002	0.002
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	0.0003	0.0001	2.7	0.1	0.36	0.04	0.004	0.000	0.045	0.000	0.000
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	0.0004	0.0000	2.6	0.1	0.29	0.04	0.007	0.002	0.039	0.001	0.001
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	0.0004	0.0001	2.5	0.1	0.37	0.03	0.005	0.001	0.042	0.000	0.000
SUGAR CREEK TRIBUTARIES																	
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	0.0003	0.0000	2.9	0.1	0.2	0.1	0.004	0.001	0.029	0.005	0.005
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	< 0.0002	0.0001	1.2	0.0	0.12	0.04	0.005	0.000	0.019	0.001	0.001

¹ More complete explanations of these are found in table I.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A22. Concentrations of trace elements in samples collected on the Lagrangian trip of September 1999 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms sec	Yb µg/L Avg	Zn µg/L Avg	Zr µg/L Avg
IROQUOIS RIVER									
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	0.0038	0.0003	0.081
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	0.0038	0.0004	0.086
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.0038	0.0005	0.083
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	0.0038	0.0005	0.071
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	0.0050	0.0002	0.080
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	0.0043	0.0003	0.077
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	0.0043	0.0003	0.084
SUGAR CREEK									
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	0.0023	0.0003	0.063
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	0.0026	0.0000	0.034
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	0.0020	0.0003	0.036
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	0.0016	0.0001	0.029
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	0.0011	0.0004	0.015
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	0.0022	0.0004	0.028
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	0.0024	0.0009	0.029
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	0.0027	0.0003	0.034
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	0.0032	0.0003	0.034
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	0.0031	0.0001	0.035
SUGAR CREEK TRIBUTARIES									
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	0.0022	0.0004	0.029
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	0.0011	0.0004	0.037

¹ More complete explanations of these are found in table I.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A23. Field measurements for samples collected on the Lagrangian trip of September 1999.

[km, kilometers, Q, discharge; cms, cubic meters per second; °C, degrees Celsius; µS/cm, microsiemens per centimeter; mg/L, milligrams per liter; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms sec	pH	Temperature °C	Specific Conductance µS/cm	Dissolved Oxygen mg/L
IROQUOIS RIVER										
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	8.10	21.9	660	8.3
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	8.00	19.0	683	5.7
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	7.92	18.7	676	5.3
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	7.95	20.8	695	6.1
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	7.90	19.1	696	6.0
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	7.92	17.6	677	5.5
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	7.92	18.9	691	na
SUGAR CREEK										
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	8.11	20.0	606	8.2
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	7.62	17.9	655	5.9
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	8.24	20.3	635	10.9
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	8.20	15.6	673	7.7
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	8.31	24.3	646	10.8
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	8.14	15.5	666	8.8
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	8.27	19.3	632	11.4
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	8.23	17.4	636	9.1
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	8.17	15.3	645	7.4
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	8.24	16.6	643	8.1
SUGAR CREEK TRIBUTARIES										
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	8.16	20.7	649	7.5
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	na	na	na	na

¹ More complete explanations of these are found in table 1.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A24. Bacterial cell counts and chlorophyll-a concentrations in samples collected on the Lagrangian trip of September 1999.

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; mL, milliliters; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms sec	Bacterial Cell Counts millions/mL	Chlorophyll-a concentrations µg/L
IROQUOIS RIVER								
IR01	Highway 55 gage, Ind.	0.0	09/13/99	16:15	Comp.	0.59	1.89	8.55
IR02	Highway 16 bridge, Ind.	2.0	09/13/99	21:40	Comp.	0.57	1.82	4.02
IR03	Brook, Ind.	5.9	09/14/99	08:00	Comp.	0.67	0.32	4.50
IR04	Meridian Rd. bridge, Ind.	9.4	09/14/99	16:30	Comp.	0.63	1.02	5.31
IR05	CR 100W bridge, Ind.	12.0	09/14/99	22:20	Comp.	0.62	0.24	6.60
IR06	Highway 41 bridge, Ind.	16.5	09/15/99	09:20	Comp.	0.64	0.87	7.88
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/15/99	20:40	Comp.	0.54	1.08	4.98
SUGAR CREEK								
SC01	CR 400W bridge, Ind.	0.0	09/13/99	18:30	Grab	0.020	1.88	2.43
SC02	CR 600W bridge, Ind.	4.5	09/13/99	20:10	Grab	0.029	1.60	3.96
SC03	Highway 71 bridge, Ind.	9.8	09/13/99	19:10	Grab	0.061	3.10	4.88
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/14/99	06:00	Grab	0.117	2.22	3.74
SC05	CR 3000E bridge, Ill.	17.7	09/14/99	15:00	Grab	0.132	2.52	1.70
SC06	CR 2800E bridge, Ill.	21.4	09/15/99	00:10	Grab	0.162	2.00	4.18
SC07	CR 900N bridge, Ill.	26.9	09/15/99	13:30	Grab	0.155	3.24	3.27
SC08	CR 2440E bridge, Ill.	30.1	09/15/99	23:00	Grab	0.170	2.07	4.38
SC09	Milford, Ill.	34.4	09/16/99	09:20	Grab	0.162	1.16	3.69
SC10	Above Mud Cr. #3, Ill.	37.8	09/16/99	16:50	Grab	0.159	2.22	1.82
SUGAR CREEK TRIBUTARIES								
SCT1	Mud Cr. #1, Ind.	11.7	09/13/99	19:40	Grab	0.044	1.80	1.62
SCT2	Mud Cr. #2, Ill.	21.2	09/15/99	01:20	Grab	0.012	1.08	19.7

¹ More complete explanations of these are found in table I.

² Composite samples were taken for the Iroquois River; grab samples were taken from the center of flow for Sugar Creek.

Table A25. Concentrations of nutrients, dissolved nitrous oxide, dissolved organic carbon (DOC), and suspended sediment in samples collected on the Lagrangian trip of May 2000.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; mg/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	NO ₃ mg N/L Median MAD	NO ₂ mg N/L Median MAD	NH ₄ mg N/L Median MAD	Kjeldahl N mg N/L Value	N ₂ O mg N/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	7.31 0.06	0.104 0.002	0.068 0.005	0.64	0.00143 0.00006
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	7.36 0.06	0.104 0.001	0.079 0.006	na	na
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	9.73 0.03	0.099 0.001	0.129 0.007	0.58	0.00169 0.00009
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	9.36 0.34	0.102 0.002	0.114 0.008	na	na
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	10.1 0.3	0.109 0.002	0.132 0.008	0.59	0.00182 0.00007
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	10.3 0.6	0.110 0.002	0.134 0.013	na	0.00165 0.00003
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	13.6 0.6	0.113 0.001	0.183 0.013	0.66	0.00226 0.00015
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	11.2 0.2	0.097 0.004	0.173 0.009	na	0.00213 0.00011
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	13.8 0.0	0.119 0.003	0.129 0.009	0.56	0.00213 0.00006
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	13.7 0.0	0.116 0.004	0.153 0.002	na	0.00218 0.00006
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	13.9 0.2	0.137 0.002	0.113 0.010	0.77	0.00237 0.00004
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	14.3 0.1	0.132 0.003	0.118 0.014	na	0.00244 0.00007
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	13.9 0.0	0.141 0.001	0.121 0.019	0.73	0.00231 0.00006
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	13.8 0.2	0.138 0.001	0.110 0.012	na	0.00231 0.00006
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	11.0 0.2	0.060 0.001	0.016 0.004	0.34	0.00087 0.00016
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	10.8 0.2	0.070 0.001	0.036 0.006	0.29	0.00161 0.00005
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	10.5 0.0	0.080 0.002	0.047 0.002	0.33	0.00118 0.00002
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	10.2 0.1	0.079 0.001	0.021 0.007	0.35	0.00104 0.00005
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	9.87 0.01	0.080 0.001	0.022 0.005	0.30	0.00084 0.00005
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	9.77 0.03	0.076 0.001	0.033 0.006	0.29	0.00099 0.00010
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	9.70 0.01	0.074 0.001	0.037 0.009	0.33	0.00108 0.00010
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	9.81 0.06	0.082 0.001	0.040 0.012	0.36	0.00119 0.00004
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	9.68 0.06	0.080 0.000	0.041 0.007	0.33	0.00101 0.00007
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	9.10 0.06	0.082 0.005	0.094 0.016	0.45	0.00107 0.00008
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	9.84 0.12	0.068 0.001	0.019 0.003	0.31	0.00098 0.00005
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	13.0 0.0	0.080 0.001	0.028 0.018	0.34	0.00123 0.00004
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	12.7 1.5	0.175 0.001	0.125 0.010	0.46	0.00241 0.00006

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A25. Concentrations of nutrients, dissolved nitrous oxide, dissolved organic carbon (DOC), and suspended sediment in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; mg/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	PO ₄ mg P/L		P mg/L		DOC mg C/L		Suspended Sediment mg/L Value
							Median	MAD	Avg	SD	Avg	SD	
IROQUOIS RIVER													
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	0.024	0.000	0.037	0.000	7.47	0.35	35
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	0.023	0.002	0.037	0.001	6.99	0.39	27
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	0.028	0.003	0.046	0.000	6.50	0.45	51
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	0.024	0.003	0.041	0.003	5.87	0.10	27
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	0.046	0.003	0.061	0.001	6.00	0.17	33
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	0.042	0.004	0.058	0.002	5.92	0.03	16
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	0.044	0.006	0.062	0.000	5.69	0.07	61
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	0.035	0.002	0.058	0.002			58
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	0.044	0.005	0.074	0.002	5.44	0.01	68
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	0.042	0.002	0.066	0.000	5.48	0.11	64
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	0.047	0.000	0.068	0.001	5.52	0.01	53
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	0.040	0.000	0.065	0.001	5.45	0.03	35
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	0.043	0.004	0.067	0.001	5.92	0.08	51
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	0.036	0.004	0.070	0.002	5.64	0.04	51
SUGAR CREEK													
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	<0.006	0.003	0.007	0.001	2.76	0.08	6
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	<0.006	0.004	0.017	0.001	2.91	0.24	11
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	<0.006	0.002	0.010	0.001	2.94	0.13	7
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	<0.006	0.005	0.012	0.002	2.86	0.03	7
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	<0.006	0.001	<0.004	0.002	3.71	0.11	9
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	<0.006	0.004	<0.004	0.002	3.02	0.13	18
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	<0.006	0.003	<0.004	0.003	3.43	0.06	41
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	<0.006	0.004	<0.004	0.001	3.28	0.03	27
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	<0.006	0.001	0.023	0.001	3.16	0.29	31
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	0.010	0.001	0.030	0.000	3.53	0.07	120
SUGAR CREEK TRIBUTARIES													
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	<0.006	0.004	0.006	0.002	2.95	0.03	6
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	<0.006	0.003	<0.004	0.001	3.05	0.02	<5
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	<0.006	0.001	0.007	0.001	3.64	0.04	18

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A26. Concentrations of major ions in samples collected on the Lagrangian trip of May 2000.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	Cl mg/L Avg SD	SO ₄ mg/L Avg SD	HCO ₃ + CO ₃ mg C/L Avg SD	Br µg/L Avg SD
IROQUOIS RIVER										
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	34 na	84 na	49.2	0.5 10 1
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	32 na	78 na	48.2	0.3 9.2 0.8
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	32 na	71 na	46.8	0.3 9.7 0.7
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	30 na	73 na	47.2	1.2 9.5 0.7
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	32 1	69 0	46.3	0.1 9.2 1.1
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	32 na	69 na	46.6	0.5 7.5 0.8
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	32 na	59 na	43.5	0.1 7.4 0.2
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	32 na	58 na	43	na 8.8 0.8
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	31 na	57 na	45.0	0.7 13 0
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	31 0	58 0	43.7	0.2 11 1
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	34 na	57 na	44.5	0.1 12 1
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	33 na	57 na	44.9	0.0 11 1
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	32 na	54 na	42.4	0.4 11 1
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	32 na	55 na	43.0	0.3 9.9 1.0
SUGAR CREEK										
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	24 1	60 0	51.6	0.6 11 1
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	26 na	63 na	52.7	0.1 13 2
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	22 na	67 na	51.4	0.0 9.1 1.0
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	26 na	78 na	48.6	1.0 9.8 1.2
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	26 na	80 na	49.4	0.2 11 1
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	25 na	80 na	50.2	0.0 10 1
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	25 0	72 0	46.6	1.0 11 1
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	25 na	68 na	47.8	0.7 12 0
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	25 na	69 na	48.1	1.4 11 0
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	25 na	65 na	46.7	0.7 11 0
SUGAR CREEK TRIBUTARIES										
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	30 na	87 na	49.5	0.2 11 0
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	25 2	54 2	41.7	0.2 8.5 0.4
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	26 na	39 na	50.0	0.7 7.6 0.1

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A26. Concentrations of major ions in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	Na mg/L Avg SD	K mg/L Avg SD	Mg mg/L Avg SD	Ca mg/L Avg SD	SiO ₂ mg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	12 0	2.1 0.3	27 4	87 3	6.1 0.1
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	11 0	2.0 0.2	25 3	85 2	5.9 0.1
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	11 0	2.1 0.6	22 1	84 1	6.5 0.1
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	11 0	2.5 0.4	35 1	84 2	6.5 0.1
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	12 0	2.7 0.2	31 5	82 1	6.7 0.2
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	12 0	2.6 0.2	29 3	85 0	5.4 0.1
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	11 0	2.5 0.2	27 2	81 1	6.0 0.1
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	10 0	2.2 0.4	23 2	79 1	6.7 0.1
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	11 0	2.1 0.0	26 0	82 1	7.3 0.1
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	11 0	2.1 0.1	25 0	83 1	7.2 0.1
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	11 0	2.0 0.0	25 1	83 1	7.3 0.1
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	11 0	2.0 0.0	25 0	82 2	7.2 0.1
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	11 0	2.2 0.0	24 0	80 1	7.3 0.1
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	11 0	2.3 0.1	25 0	80 2	7.4 0.3
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	7.4 0.1	0.75 0.05	29 2	85 1	7.1 0.0
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	8.0 0.2	0.81 0.04	29 1	88 1	7.1 0.2
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	7.2 0.2	0.85 0.04	29 1	88 1	6.8 0.1
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	8.4 0.3	0.93 0.02	31 1	87 2	6.3 0.2
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	8.3 0.3	0.94 0.04	31 1	86 0	6.3 0.1
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	8.2 0.2	0.97 0.06	32 2	84 1	6.2 0.2
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	7.8 0.2	1.0 0.0	32 1	79 1	5.4 0.1
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	7.6 0.1	1.0 0.0	32 1	77 1	5.4 0.1
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	8.2 0.1	1.0 0.0	31 1	77 1	5.6 0.2
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	8.0 0.1	1.2 0.1	31 1	74 0	5.5 0.1
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	9.6 0.1	0.82 0.02	32 1	90 1	5.8 0.1
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	6.7 0.1	0.75 0.03	32 1	66 1	4.1 0.0
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	6.8 0.2	0.96 0.06	33 2	71 1	5.1 0.1

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000.

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	Al µg/L Avg SD	As µg/L Avg SD	B µg/L Avg SD	Ba µg/L Avg SD	Be µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	2.1 0.1	0.89 0.02	55 9	64 2	<0.004 0.003
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	1.3 0.4	0.83 0.06	54 6	65 0	<0.004 0.005
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	7.1 0.1	0.75 0.03	43 3	58 0	<0.004 0.006
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	4.1 0.1	0.79 0.04	59 11	59 1	<0.004 0.006
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	3.6 0.3	0.79 0.04	59 10	58 0	<0.004 0.008
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	<0.5 1.8	1.1 0.0	56 6	56 1	<0.004 0.006
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	<0.5 0.3	1.0 0.0	50 3	52 1	<0.004 0.006
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	4.0 0.1	0.64 0.05	43 3	53 1	<0.004 0.003
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	6.3 0.1	0.69 0.02	47 2	53 0	<0.01 0.01
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	4.3 0.1	0.63 0.01	47 1	54 1	<0.01 0.01
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	2.9 0.1	0.65 0.03	47 0	55 1	<0.01 0.00
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	2.8 0.1	0.66 0.02	46 1	55 1	<0.01 0.01
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	2.9 0.0	0.61 0.01	45 1	55 1	<0.01 0.00
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	3.0 0.1	0.60 0.01	46 1	53 0	<0.01 0.00
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	1.0 0.1	0.49 0.00	38 2	49 0	<0.01 0.01
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	1.3 0.1	0.49 0.02	40 3	47 1	<0.01 0.00
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	1.5 0.2	0.55 0.00	39 3	51 0	<0.01 0.01
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	1.3 0.1	0.57 0.06	39 2	51 0	<0.01 0.00
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	0.8 0.1	0.56 0.02	40 2	49 1	<0.01 0.00
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	0.8 0.0	0.54 0.03	44 2	50 1	<0.01 0.01
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	1.4 0.2	0.51 0.02	44 1	44 1	<0.01 0.01
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	0.9 0.0	0.56 0.01	44 1	42 1	<0.01 0.00
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	1.1 0.0	0.52 0.01	44 1	41 0	<0.01 0.00
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	6.5 0.1	0.58 0.02	46 1	40 1	<0.01 0.01
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	1.0 0.0	0.46 0.02	30 1	56 1	<0.01 0.01
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	1.5 0.1	0.40 0.02	46 1	21 0	<0.01 0.01
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	0.6 0.1	0.53 0.02	44 3	31 1	<0.01 0.00

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	Bi µg/L		Cd µg/L		Ce µg/L		Co µg/L	
							Avg	SD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER														
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	<0.001	0.0008	0.015	0.001	0.020	0.000	<0.002	0.013
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	0.0015	0.0006	0.015	0.005	0.023	0.001	<0.002	0.007
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	<0.001	0.0005	0.016	0.001	0.032	0.001	<0.002	0.012
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	<0.001	0.0006	0.014	0.002	0.028	0.000	<0.002	0.010
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	<0.001	0.0004	0.016	0.003	0.027	0.002	<0.002	0.007
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	<0.001	0.0004	0.012	0.002	0.0055	0.0004	<0.002	0.015
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	<0.001	0.0006	0.012	0.003	0.015	0.001	<0.002	0.009
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	<0.001	0.0008	0.015	0.003	0.027	0.001	<0.002	0.008
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	<0.002	0.000	0.002	0.001	0.026	0.001	<0.002	0.008
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	<0.002	0.001	0.005	0.001	0.015	0.001	<0.002	0.016
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	<0.002	0.001	<0.002	0.001	0.022	0.001	<0.002	0.016
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	<0.002	0.001	0.005	0.005	0.018	0.001	<0.002	0.018
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	<0.002	0.001	0.003	0.002	0.022	0.000	<0.002	0.002
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	<0.002	0.001	0.003	0.002	0.022	0.001	<0.002	0.019
SUGAR CREEK														
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	<0.002	0.001	0.006	0.002	0.022	0.001	<0.002	0.001
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	<0.002	0.001	0.004	0.001	0.031	0.001	<0.002	0.015
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	0.004	0.001	0.002	0.001	0.026	0.001	<0.002	0.012
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	<0.002	0.001	<0.002	0.001	0.018	0.000	<0.002	0.002
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	<0.002	0.001	0.004	0.003	0.013	0.000	<0.002	0.007
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	<0.002	0.001	<0.002	0.002	0.015	0.001	<0.002	0.007
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	<0.002	0.001	<0.002	0.001	0.013	0.001	<0.002	0.014
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	<0.002	0.000	<0.002	0.001	0.017	0.001	<0.002	0.011
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	<0.002	0.002	<0.002	0.002	0.016	0.001	<0.002	0.006
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	<0.002	0.003	<0.002	0.001	0.030	0.001	<0.002	0.007
SUGAR CREEK TRIBUTARIES														
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	<0.002	0.001	0.010	0.001	0.016	0.000	<0.002	0.006
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	<0.002	0.001	0.004	0.000	0.016	0.001	<0.002	0.001
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	<0.002	0.001	0.003	0.002	0.012	0.001	<0.002	0.011

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	Cr µg/L Avg SD	Cs µg/L Avg SD	Cu µg/L Avg SD	Dy µg/L Avg SD	Er µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	<0.1 0.0	<0.009 0.002	0.70 0.01	0.0043 0.0005	0.0042 0.0004
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	<0.1 0.1	<0.009 0.003	0.72 0.02	0.0050 0.0005	0.0052 0.0005
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	<0.1 0.0	<0.009 0.004	0.78 0.02	0.0069 0.0002	0.0064 0.0003
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	<0.1 0.0	<0.009 0.003	0.56 0.03	0.0059 0.0004	0.0058 0.0002
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	<0.1 0.1	<0.009 0.001	0.75 0.01	0.0056 0.0006	0.0057 0.0002
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	<0.1 1.6	<0.009 0.001	0.63 0.01	0.0029 0.0002	0.0028 0.0004
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	<0.1 1.3	<0.009 0.002	1.0 0.1	0.0036 0.0002	0.0031 0.0004
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	<0.1 0.1	<0.009 0.002	0.87 0.04	0.0053 0.0001	0.0056 0.0005
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	<0.2 0.0	<0.04 0.01	0.73 0.03	0.0059 0.0004	0.0059 0.0003
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	<0.2 0.1	<0.04 0.02	0.60 0.04	0.0040 0.0003	0.0046 0.0008
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	<0.2 0.0	<0.04 0.01	0.63 0.08	0.0051 0.0005	0.0053 0.0008
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	<0.2 0.1	<0.04 0.01	0.56 0.04	0.0043 0.0004	0.0042 0.0009
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	<0.2 0.1	<0.04 0.01	0.74 0.02	0.0053 0.0006	0.0040 0.0003
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	<0.2 0.0	<0.04 0.02	0.66 0.04	0.0053 0.0006	0.0050 0.0006
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	<0.2 0.0	<0.04 0.01	0.30 0.01	0.0041 0.0006	0.0030 0.0006
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	<0.2 0.0	<0.04 0.01	0.94 0.04	0.0046 0.0003	0.0027 0.0009
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	<0.2 0.0	<0.04 0.01	1.2 0.0	0.0036 0.0004	0.0031 0.0005
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	<0.2 0.0	<0.04 0.02	0.43 0.01	0.0040 0.0000	0.0025 0.0005
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	<0.2 0.0	<0.04 0.00	0.40 0.05	0.0025 0.0007	0.0015 0.0001
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	<0.2 0.0	<0.04 0.07	0.33 0.05	0.0027 0.0004	0.0018 0.0003
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	<0.2 0.1	<0.04 0.01	0.35 0.04	0.0030 0.0001	0.0027 0.0002
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	<0.2 0.0	<0.04 0.01	0.34 0.03	0.0033 0.0007	0.0027 0.0002
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	<0.2 0.1	<0.04 0.02	0.36 0.02	0.0032 0.0006	0.0023 0.0003
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	<0.2 0.1	<0.04 0.01	0.39 0.02	0.0051 0.0003	0.0034 0.0006
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	<0.2 0.0	<0.04 0.01	1.1 0.0	0.0029 0.0004	0.0025 0.0004
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	<0.2 0.0	<0.04 0.00	0.48 0.04	0.0021 0.0002	0.0018 0.0002
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	<0.2 0.0	<0.04 0.01	0.40 0.04	0.0037 0.0005	0.0018 0.0007

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	Eu µg/L Avg SD	Fe µg/L Avg SD	Gd µg/L Avg SD	Hg ng/L Avg SD	Ho µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	<0.0003 0.0013	25 2	0.0050 0.0004	0.7 0.1	0.0010 0.0000
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	<0.0003 0.0005	33 2	0.0055 0.0006	<0.3 0.3	0.0014 0.0001
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	0.0006 0.0002	8.9 2.3	0.0078 0.0009	0.7 0.2	0.0017 0.0000
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	0.0008 0.0007	15 1	0.0069 0.0005	<0.5 0.0	0.0015 0.0000
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	0.0013 0.0008	12 2	0.0069 0.0003	0.6 0.1	0.0014 0.0000
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	<0.0003 0.0003	3.0 0.1	0.0033 0.0008	1.1 0.4	0.0007 0.0000
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	0.0008 0.0006	4.4 0.3	0.0039 0.0006	0.6 0.3	0.0008 0.0001
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	0.0005 0.0005	7.5 2.8	0.0074 0.0006	0.8 0.1	0.0013 0.0002
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	<0.0002 0.0011	9.5 0.1	0.0074 0.0010	0.7 0.1	0.0015 0.0001
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	0.0005 0.0016	6.6 0.1	0.0048 0.0009	0.4 0.1	0.0009 0.0002
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	0.0004 0.0007	8.1 0.1	0.0053 0.0004	0.8 0.5	0.0012 0.0001
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	0.0006 0.0019	8.8 0.1	0.0051 0.0007	0.7 0.2	0.0012 0.0000
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	0.0004 0.0014	9.1 0.3	0.0060 0.0008	0.8 0.1	0.0011 0.0000
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	0.0013 0.0024	12 0	0.0060 0.0012	<0.2 0.3	0.0013 0.0001
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	<0.0002 0.0012	40 1	0.0054 0.0008	5.4 0.1	0.0010 0.0003
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	0.0005 0.0003	38 0	0.0060 0.0004	1.1 0.1	0.0009 0.0002
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	<0.0002 0.0011	33 1	0.0065 0.0008	<0.2 0.1	0.0009 0.0002
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	<0.0002 0.0012	23 0	0.0044 0.0007	1.0 0.2	0.0008 0.0001
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	<0.0002 0.0003	19 0	0.0033 0.0003	1.6 0.1	0.0005 0.0001
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	<0.0002 0.0000	18 0	0.0040 0.0003	2.3 0.3	0.0006 0.0002
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	<0.0002 0.0011	6.9 0.3	0.0045 0.0011	<0.2 0.2	0.0006 0.0001
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	<0.0002 0.0002	10 0	0.0046 0.0006	0.5 0.1	0.0007 0.0003
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	<0.0002 0.0005	7.8 0.3	0.0045 0.0004	2.0 0.2	0.0007 0.0000
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	<0.0002 0.0000	3.1 0.0	0.0065 0.0010	0.5 0.1	0.0012 0.0001
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	<0.0002 0.0007	12 0	0.0049 0.0003	<0.2 0.2	0.0008 0.0001
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	<0.0002 0.0004	12 0	0.0037 0.0005	0.7 0.3	0.0006 0.0001
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	<0.0002 0.0001	6.4 0.4	0.0047 0.0007	1.1 0.1	0.0008 0.0000

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	La µg/L		Li µg/L		Lu µg/L		Mn µg/L		Mo µg/L	
IROQUOIS RIVER																
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	0.013	0.000	3.8	0.1	0.0017	0.0000	33	2	5.0	0.1
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	0.015	0.001	3.7	0.0	0.0016	0.0001	33	2	4.8	0.0
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	0.026	0.000	3.6	0.0	0.0018	0.0001	20	5	4.7	0.0
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	0.022	0.001	3.7	0.0	0.0014	0.0002	24	2	4.7	0.0
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	0.023	0.000	3.5	0.1	0.0014	0.0000	12	1	4.5	0.1
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	0.0067	0.0003	3.6	0.1	0.0010	0.0001	8.1	0.3	4.7	0.0
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	0.011	0.000	3.3	0.0	0.0009	0.0001	6.9	0.4	4.0	0.0
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	0.022	0.001	3.0	0.1	0.0016	0.0001	8.2	1.4	3.8	0.0
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	0.021	0.001	3.3	0.1	0.0014	0.0002	5.5	0.2	3.9	0.1
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	0.012	0.001	3.3	0.0	0.0010	0.0001	7.2	0.4	3.9	0.0
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	0.018	0.001	3.2	0.1	0.0015	0.0001	6.6	0.5	3.8	0.1
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	0.014	0.001	3.2	0.1	0.0014	0.0001	7.3	0.5	3.8	0.1
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	0.018	0.001	3.1	0.0	0.0014	0.0002	3.6	0.2	3.6	0.1
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	0.017	0.000	3.2	0.1	0.0012	0.0000	3.9	0.2	3.7	0.0
SUGAR CREEK																
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	0.017	0.000	3.9	0.1	0.0005	0.0001	16	1	3.7	0.1
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	0.021	0.001	3.9	0.1	0.0004	0.0000	29	0	3.8	0.1
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	0.019	0.000	3.7	0.1	0.0006	0.0001	32	0	3.7	0.0
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	0.012	0.001	3.6	0.1	0.0004	0.0001	14	1	4.0	0.0
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	0.0089	0.0002	3.7	0.2	0.0003	0.0001	11	0	4.0	0.1
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	0.011	0.001	3.7	0.0	0.0004	0.0000	12	0	4.0	0.0
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	0.010	0.001	3.5	0.1	0.0004	0.0001	8.8	0.2	3.6	0.1
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	0.011	0.001	3.7	0.1	0.0004	0.0000	14	0	3.6	0.0
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	0.011	0.000	3.7	0.1	0.0003	0.0001	11	0	3.6	0.0
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	0.022	0.001	3.6	0.1	0.0006	0.0000	11	0	3.5	0.1
SUGAR CREEK TRIBUTARIES																
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	0.010	0.001	2.9	0.1	0.0004	0.0001	23	0	3.7	0.1
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	0.010	0.001	3.8	0.1	0.0003	0.0001	9.6	0.0	2.3	0.0
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	0.0084	0.0002	3.9	0.1	0.0003	0.0001	17	0	2.4	0.0

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	Nd µg/L Avg SD	Ni µg/L Avg SD	Pb µg/L Avg SD	Pr µg/L Avg SD	Rb µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	0.017	0.001	0.045	0.007	0.001
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	0.017	0.001	0.044	0.004	0.003
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	0.030	0.001	0.028	0.008	0.002
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	0.025	0.001	0.026	0.003	0.003
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	0.026	0.001	0.023	0.003	0.001
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	0.0087	0.0003	0.004	0.001	0.002
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	0.013	0.001	0.009	0.001	0.0028
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	0.026	0.001	0.022	0.003	0.0053
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	0.026	0.001	0.024	0.001	0.0055
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	0.016	0.001	0.019	0.001	0.0032
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	0.022	0.001	0.040	0.018	0.0044
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	0.018	0.001	0.025	0.001	0.0038
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	0.023	0.001	0.026	0.001	0.0044
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	0.023	0.002	0.028	0.002	0.0047
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	0.019	0.001	0.052	0.001	0.0043
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	0.025	0.001	0.055	0.003	0.0053
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	0.021	0.001	0.099	0.000	0.0053
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	0.015	0.001	0.037	0.001	0.0031
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	0.011	0.001	0.034	0.002	0.0024
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	0.012	0.001	0.038	0.009	0.0030
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	0.013	0.001	0.019	0.002	0.0026
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	0.014	0.000	0.029	0.004	0.0031
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	0.014	0.001	0.020	0.000	0.0027
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	0.026	0.001	0.010	0.002	0.0054
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	0.012	0.000	0.051	0.001	0.0027
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	0.012	0.000	0.025	0.003	0.0028
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	0.011	0.000	0.016	0.002	0.0024

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	Re µg/L Avg SD	Sb µg/L Avg SD	Se µg/L Avg SD	Sm µg/L Avg SD	Sr µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	0.021 0.001	0.14 0.00	0.9 0.1	0.0034 0.0006	269 4
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	0.019 0.001	0.14 0.01	0.9 0.0	0.0036 0.0005	257 1
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	0.019 0.001	0.13 0.01	1.0 0.0	0.0066 0.0002	257 1
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	0.017 0.001	0.13 0.00	0.9 0.0	0.0056 0.0004	254 5
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	0.019 0.001	0.13 0.01	0.9 0.1	0.0054 0.0002	250 2
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	0.019 0.001	0.14 0.01	1.5 0.1	0.0029 0.0001	253 3
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	0.015 0.001	0.13 0.01	1.6 0.2	0.0033 0.0007	226 2
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	0.016 0.000	0.12 0.00	0.9 0.0	0.0066 0.0006	216 1
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	0.017 0.001	0.12 0.00	1.2 0.0	0.0058 0.0003	229 1
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	0.017 0.001	0.13 0.00	1.1 0.0	0.0033 0.0006	229 1
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	0.017 0.001	0.12 0.00	1.0 0.1	0.0045 0.0002	232 3
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	0.016 0.001	0.12 0.01	1.1 0.1	0.0042 0.0008	229 1
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	0.017 0.000	0.13 0.01	1.0 0.1	0.0044 0.0009	222 1
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	0.016 0.001	0.13 0.01	1.0 0.0	0.0040 0.0006	225 1
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	0.015 0.001	0.078 0.001	2.2 0.1	0.0037 0.0009	189 3
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	0.014 0.001	0.091 0.002	2.3 0.0	0.0053 0.0009	189 1
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	0.018 0.001	0.088 0.003	2.1 0.1	0.0040 0.0001	176 1
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	0.017 0.001	0.11 0.01	2.0 0.1	0.0034 0.0004	170 4
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	0.017 0.001	0.11 0.00	1.9 0.1	0.0023 0.0011	172 2
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	0.017 0.001	0.11 0.00	1.9 0.1	0.0027 0.0004	170 2
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	0.015 0.000	0.10 0.01	1.5 0.0	0.0029 0.0006	159 4
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	0.015 0.001	0.10 0.00	1.5 0.1	0.0035 0.0011	154 2
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	0.015 0.000	0.10 0.01	1.4 0.2	0.0038 0.0001	157 2
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	0.013 0.000	0.10 0.00	1.4 0.2	0.0051 0.0002	151 1
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	0.018 0.001	0.11 0.00	1.9 0.1	0.0036 0.0001	152 2
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	0.011 0.000	0.068 0.006	1.7 0.1	0.0025 0.0004	134 3
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	0.010 0.000	0.061 0.001	1.1 0.1	0.0035 0.0010	121 0

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	Ta µg/L		Tb µg/L		Te µg/L		Th µg/L		Ti µg/L	
							Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER																
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	<0.005	0.003	0.0007	0.0001	0.010	0.000	0.0011	0.0002	<0.1	0.1
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	<0.005	0.001	0.0006	0.0002	0.011	0.004	0.0014	0.0001	<0.1	0.2
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	<0.005	0.002	0.0011	0.0001	0.010	0.013	0.0016	0.0001	<0.1	0.1
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	<0.005	0.003	0.0010	0.0000	<0.01	0.005	0.0012	0.0001	<0.1	0.0
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	<0.005	0.003	0.0010	0.0000	<0.01	0.005	0.0015	0.0001	<0.1	0.0
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	0.023	0.005	0.0003	0.0000	<0.01	0.007	0.0009	0.0002	<0.1	0.1
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	0.024	0.002	0.0007	0.0001	<0.01	0.002	0.0015	0.0001	<0.1	0.1
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	<0.005	0.002	0.0009	0.0000	<0.01	0.006	0.0016	0.0005	<0.1	0.0
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	<0.002	0.001	0.0011	0.0000	0.013	0.004	0.0016	0.0002	<0.04	0.06
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	<0.002	0.001	0.0007	0.0001	<0.008	0.003	0.0014	0.0005	<0.04	0.02
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	<0.002	0.001	0.0010	0.0000	0.012	0.008	0.0014	0.0001	<0.04	0.03
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	<0.002	0.000	0.0009	0.0001	<0.008	0.004	0.0013	0.0002	<0.04	0.08
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	<0.002	0.001	0.0008	0.0001	0.009	0.004	0.0015	0.0002	<0.04	0.02
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	<0.002	0.001	0.0007	0.0001	0.014	0.007	0.0016	0.0004	<0.04	0.09
SUGAR CREEK																
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	<0.002	0.001	0.0009	0.0001	0.011	0.002	0.0013	0.0002	<0.04	0.05
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	<0.002	0.001	0.0007	0.0000	0.011	0.002	0.0016	0.0003	<0.04	0.09
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	<0.002	0.001	0.0006	0.0001	0.012	0.004	0.0016	0.0001	<0.04	0.10
SC04	Stateline Rd. bridge, III.-Ind.	14.0	05/08/00	15:30	Grab	1.06	<0.002	0.001	0.0005	0.0001	0.013	0.005	0.0012	0.0002	<0.04	0.04
SC05	CR 3000E bridge, III.	17.7	05/08/00	19:15	Grab	1.14	<0.002	0.001	0.0005	0.0001	0.020	0.004	0.0010	0.0001	<0.04	0.06
SC06	CR 2800E bridge, III.	21.4	05/08/00	22:40	Grab	1.40	<0.002	0.001	0.0005	0.0000	0.009	0.003	0.0013	0.0002	<0.04	0.02
SC07	CR 900N bridge, III.	26.9	05/01/00	05:35	Grab	1.83	<0.002	0.000	0.0005	0.0001	0.017	0.005	0.0009	0.0002	<0.04	0.17
SC08	CR 2440E bridge, III.	30.1	05/09/00	08:45	Grab	2.06	<0.002	0.000	0.0005	0.0001	0.008	0.003	0.0009	0.0003	<0.04	0.09
SC09	Milford, III.	34.4	05/09/00	11:10	Grab	1.95	<0.002	0.001	0.0006	0.0002	0.020	0.006	0.0010	0.0002	<0.04	0.06
SC10	Above Mud Cr. #3, III.	37.8	05/09/00	17:15	Grab	1.92	<0.002	0.001	0.0008	0.0001	0.011	0.005	0.0007	0.0002	<0.04	0.04
SUGAR CREEK TRIBUTARIES																
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	<0.002	0.001	0.0005	0.0001	0.016	0.008	0.0012	0.0002	<0.04	0.02
SCT2	Mud Cr. #2, III.	21.2	05/08/00	21:20	Grab	0.33	<0.002	0.001	0.0006	0.0001	0.014	0.003	0.0014	0.0003	<0.04	0.02
SCT3	Unnamed trib., III.	28.5	05/01/00	06:10	Grab	na	<0.002	0.000	0.0004	0.0001	0.011	0.003	0.0005	0.0002	<0.04	0.01

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	Tl		Tm		U		V		W	
							Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER																
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	0.0087	0.0020	0.0008	0.0000	2.4	0.0	0.11	0.01	0.004	0.000
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	0.0093	0.0036	0.0011	0.0001	2.3	0.0	0.12	0.04	0.002	0.001
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	0.011	0.003	0.0010	0.0000	2.2	0.1	0.10	0.05	0.004	0.001
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	0.010	0.001	0.0010	0.0001	2.2	0.1	0.14	0.05	0.003	0.001
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	0.010	0.003	0.0011	0.0001	2.2	0.0	0.12	0.02	0.003	0.000
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	0.0066	0.0013	0.0004	0.0000	2.1	0.0	<0.05	0.02	0.036	0.018
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	0.0072	0.0030	0.0005	0.0002	1.8	0.0	<0.05	0.02	0.039	0.000
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	0.0091	0.0005	0.0007	0.0000	1.9	0.0	0.09	0.02	0.004	0.001
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	0.010	0.001	0.0010	0.0000	2.0	0.0	<0.2	0.0	0.005	0.001
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	0.012	0.002	0.0008	0.0001	1.9	0.0	<0.2	0.1	0.003	0.001
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	0.010	0.002	0.0007	0.0001	1.9	0.0	<0.2	0.1	0.003	0.002
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	0.010	0.001	0.0005	0.0000	1.9	0.0	<0.2	0.1	0.003	0.002
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	0.010	0.001	0.0008	0.0001	1.9	0.0	<0.2	0.0	0.003	0.000
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	0.011	0.003	0.0009	0.0002	1.9	0.0	<0.2	0.1	0.004	0.000
SUGAR CREEK																
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	0.006	0.002	0.0004	0.0000	2.6	0.0	<0.2	0.3	0.003	0.000
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	0.007	0.001	0.0004	0.0000	2.5	0.0	<0.2	0.0	0.009	0.003
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	0.011	0.002	0.0004	0.0000	2.7	0.0	<0.2	0.0	0.009	0.001
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	0.013	0.000	0.0003	0.0000	2.5	0.1	<0.2	0.0	0.004	0.001
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	0.014	0.002	0.0002	0.0001	2.5	0.0	<0.2	0.0	0.003	0.000
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	0.014	0.002	0.0003	0.0000	2.4	0.0	<0.2	0.0	0.002	0.000
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	0.017	0.003	0.0003	0.0000	2.1	0.0	<0.2	0.1	<0.001	0.000
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	0.012	0.002	0.0004	0.0001	1.9	0.0	<0.2	0.0	0.001	0.000
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	0.014	0.002	0.0003	0.0000	1.9	0.0	<0.2	0.0	0.017	0.001
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	0.013	0.004	0.0006	0.0001	1.9	0.0	<0.2	0.1	0.005	0.001
SUGAR CREEK TRIBUTARIES																
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	0.011	0.001	0.0003	0.0000	2.4	0.0	<0.2	0.0	0.007	0.001
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	0.010	0.001	0.0002	0.0000	1.1	0.0	<0.2	0.0	0.011	0.001
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	0.011	0.001	0.0004	0.0000	1.0	0.0	<0.2	0.1	0.006	0.000

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A27. Concentrations of trace elements in samples collected on the Lagrangian trip of May 2000 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	Y µg/L		Yb µg/L		Zn µg/L		Zr µg/L	
IROQUOIS RIVER														
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	0.040	0.001	0.0076	0.0013	1.1	0.2	0.075	0.001
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	0.037	0.000	0.0076	0.0002	6.5	0.2	0.068	0.003
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	0.052	0.000	0.0078	0.0009	1.3	0.2	0.096	0.006
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	0.048	0.000	0.0085	0.0003	0.76	0.15	0.077	0.004
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	0.050	0.000	0.0082	0.0001	0.77	0.08	0.093	0.003
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	0.021	0.001	0.0036	0.0010	1.3	0.1	0.12	0.00
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	0.026	0.001	0.0047	0.0004	1.3	0.1	0.12	0.00
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	0.044	0.000	0.0067	0.0005	0.68	0.07	0.079	0.002
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	0.047	0.001	0.0079	0.0005	1.5	0.0	0.073	0.006
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	0.037	0.001	0.0063	0.0003	1.3	0.1	0.069	0.002
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	0.042	0.001	0.0072	0.0003	1.9	0.2	0.075	0.007
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	0.037	0.002	0.0062	0.0003	1.9	0.2	0.062	0.002
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	0.042	0.001	0.0069	0.0004	1.5	0.2	0.080	0.003
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	0.041	0.000	0.0069	0.0002	1.6	0.2	0.067	0.002
SUGAR CREEK														
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	0.038	0.002	0.0025	0.0003	24	0	0.030	0.002
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	0.043	0.001	0.0025	0.0005	2.9	0.2	0.039	0.003
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	0.038	0.001	0.0028	0.0004	2.1	0.1	0.024	0.001
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	0.027	0.000	0.0021	0.0003	1.5	0.2	0.020	0.001
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	0.020	0.001	0.0020	0.0002	2.2	0.1	0.016	0.001
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	0.026	0.000	0.0019	0.0004	1.4	0.4	0.018	0.002
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	0.030	0.001	0.0018	0.0004	1.4	0.0	0.020	0.001
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	0.034	0.002	0.0025	0.0001	1.4	0.1	0.022	0.000
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	0.034	0.001	0.0032	0.0006	1.5	0.1	0.019	0.001
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	0.053	0.001	0.0033	0.0004	1.1	0.2	0.038	0.004
SUGAR CREEK TRIBUTARIES														
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	0.031	0.001	0.0026	0.0003	2.4	0.1	0.033	0.000
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	0.026	0.002	0.0015	0.0005	4.3	0.1	0.021	0.002
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	0.024	0.001	0.0020	0.0003	2.0	0.0	0.019	0.000

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A28. Field measurements for samples collected on the Lagrangian trip of May 2000.

[km, kilometers, Q, discharge; cms, cubic meters per second; °C, degrees Celsius; µS/cm, microsiemens per centimeter; mg/L, milligrams per liter; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	pH	Temperature °C	Specific Conductance µS/cm	Dissolved Oxygen mg/L
IROQUOIS RIVER										
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Comp.	5.7	7.94	21.5	652	6.3
IR01	Highway 55 gage, Ind.	0.0	05/01/00	14:20	Grab	5.7	7.94	21.5	652	6.3
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	7.87	19.9	628	6.3
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	7.87	19.9	628	6.3
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	7.84	19.0	631	6.1
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	7.84	19.0	631	6.1
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	7.83	17.3	620	6.6
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	7.83	17.3	620	6.6
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	7.80	17.6	617	6.8
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	7.80	17.6	617	6.8
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	7.77	18.1	621	6.4
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	7.77	18.1	621	6.4
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	7.77	17.6	608	6.3
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	7.77	17.6	608	6.3
SUGAR CREEK										
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	8.27	21.4	626	10.9
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	8.08	19.3	636	9.7
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	8.06	18.9	636	9.5
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	8.28	22.7	642	9.0
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	8.20	22.2	639	8.0
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	8.18	21.7	640	7.1
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	8.11	20.4	610	6.9
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	8.09	20.3	607	6.9
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	8.10	20.8	615	7.0
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	8.04	21.0	597	7.5
SUGAR CREEK TRIBUTARIES										
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	8.22	21.6	666	9.9
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	8.33	21.8	578	7.7
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	7.95	19.5	601	6.2

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A29. Bacterial cell counts and chlorophyll-a concentrations in samples collected on the Lagrangian trip of May 2000.

[km, kilometers, Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; mL, milliliters; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Type ²	Q cms	Bacterial Cell Counts millions/mL	Chlorophyll-a concentrations µg/L
IROQUOIS RIVER								
IR01	Highway 55 gage, Ind.	0.0	05/09/00	14:20	Comp.	5.7	na	5.49
IR01	Highway 55 gage, Ind.	0.0	05/09/00	14:20	Grab	5.7	na	na
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Comp.	19.8	na	na
IR02	Highway 16 bridge, Ind.	2.0	05/09/00	21:30	Grab	19.8	3.10	na
IR03	Brook, Ind.	5.9	05/09/00	03:30	Comp.	17.0	na	4.55
IR03	Brook, Ind.	5.9	05/09/00	03:30	Grab	17.0	na	na
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Comp.	19.5	3.20	4.80
IR04	Meridian Rd. bridge, Ind.	9.4	05/10/00	08:40	Grab	19.5	2.50	na
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Comp.	17.4	2.80	6.20
IR05	CR 100W bridge, Ind.	12.0	05/10/00	11:20	Grab	17.4	na	na
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Comp.	19.5	na	5.52
IR06	Highway 41 bridge, Ind.	16.5	05/11/00	18:00	Grab	19.5	3.00	na
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Comp.	19.3	na	na
IR07	Newton Co. Fairgrounds, Ind.	21.1	05/11/00	00:30	Grab	19.3	na	na
SUGAR CREEK								
SC01	CR 400W bridge, Ind.	0.0	05/08/00	13:20	Grab	0.39	na	na
SC02	CR 600W bridge, Ind.	4.5	05/08/00	13:45	Grab	0.50	na	na
SC03	Highway 71 bridge, Ind.	9.8	05/08/00	10:15	Grab	0.56	na	na
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	05/08/00	15:30	Grab	1.06	na	na
SC05	CR 3000E bridge, Ill.	17.7	05/08/00	19:15	Grab	1.14	na	na
SC06	CR 2800E bridge, Ill.	21.4	05/08/00	22:40	Grab	1.40	3.50	na
SC07	CR 900N bridge, Ill.	26.9	05/01/00	05:35	Grab	1.83	na	5.12
SC08	CR 2440E bridge, Ill.	30.1	05/09/00	08:45	Grab	2.06	1.45	5.23
SC09	Milford, Ill.	34.4	05/09/00	11:10	Grab	1.95	na	4.09
SC10	Above Mud Cr. #3, Ill.	37.8	05/09/00	17:15	Grab	1.92	na	5.30
SUGAR CREEK TRIBUTARIES								
SCT1	Mud Cr. #1, Ind.	11.7	05/08/00	11:30	Grab	0.38	na	na
SCT2	Mud Cr. #2, Ill.	21.2	05/08/00	21:20	Grab	0.33	1.70	na
SCT3	Unnamed trib., Ill.	28.5	05/01/00	06:10	Grab	na	na	4.52

¹ More complete explanations of these are found in table 1.

² Both composite and grab samples were taken for Iroquois River; only grabs were taken for Sugar Creek. Grabs were taken from the center of flow.

Table A30. Concentrations of nutrients, dissolved gases, dissolved organic carbon (DOC), and suspended sediment in grab samples collected on the synoptic trip of September 2001.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; µg C/L, micrograms carbon per liter; mg/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	NO ₃ mg N/L	Median	MAD	NO ₂ mg N/L	Median	MAD	NH ₄ mg N/L	Median	MAD	Kjeldahl N mg N/L	Value	N ₂ O mg N/L	CH ₄ µg C/L
IROQUOIS RIVER																		
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	1.4	0.1	0.018	0.001	0.062	0.009	0.58	0.00041	0.00000	0.023	0.000		
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	1.1	0.1	0.016	0.001	0.10	0.00	0.60	0.00051	0.00001	0.036	0.000		
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	1.0	0.0	0.021	0.001	0.11	0.00	0.60	0.00061	0.00002	0.035	0.003		
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	1.1	0.1	0.023	0.001	0.10	0.00	0.58	0.00057	0.00000	0.026	0.000		
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	1.0	0.1	0.023	0.001	0.067	0.008	0.53	0.00053	0.00002	0.023	0.001		
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	1.1	0.1	0.011	0.021	0.075	0.005	0.54	0.00065	0.00001	0.032	0.000		
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	1.0	0.1	0.026	0.003	0.077	0.012	0.54	0.00058	0.00001	0.026	0.000		
SUGAR CREEK																		
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	0.29	0.04	0.010	0.000	0.063	0.007	0.34	0.00045	0.00002	0.011	0.000		
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	0.98	0.06	0.047	0.001	0.091	0.006	0.30	0.00068	0.00001	0.007	0.000		
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	1.1	0.1	0.019	0.000	0.044	0.002	0.22	0.00054	0.00001	0.005	0.000		
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	1.2	0.1	0.014	0.000	0.033	0.001	0.25	0.00036	0.00000	0.005	0.000		
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	1.3	0.3	0.012	0.000	< 0.02	0.03	0.25	0.00038	0.00002	0.003	0.000		
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	1.9	0.1	0.013	0.000	< 0.02	0.01	0.24	0.00044	0.00000	0.006	0.000		
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	1.8	0.1	0.011	0.000	0.027	0.019	0.30	0.00037	0.00000	0.006	0.000		
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	3.4	0.4	0.016	0.000	< 0.03	0.01	0.30	0.00064	0.00000	0.016	0.000		
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	3.5	0.2	0.016	0.000	0.098	0.017	0.29	0.00054	0.00000	0.016	0.000		
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	3.4	0.1	0.020	0.001	0.062	0.034	0.32	0.00054	0.00001	0.015	0.000		
SUGAR CREEK TRIBUTARIES																		
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	1.2	0.1	0.014	0.002	< 0.02	0.03	0.32	0.00044	0.00001	0.009	0.000		
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	4.4	0.1	0.028	0.001	< 0.02	na	0.35	0.00065	0.00000	0.005	0.000		
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	7.6	0.0	0.027	0.001	< 0.03	0.01	0.33	0.00063	0.00001	0.009	0.000		

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A30. Concentrations of nutrients, dissolved gases, dissolved organic carbon (DOC), and suspended sediment in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; µg C/L, micrograms carbon per liter; mg/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	PO ₄ mg P/L		P mg/L		DOC mg C/L		Suspended Sediment mg/L	
						Median	MAD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER													
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	0.092	0.063	0.130	0.020	6.6	0.1	78	
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	0.044	0.006	0.100	0.010	6.8	0.0	< 5	
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	0.048	0.002	0.110	0.010	7.1	0.1	22	
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	0.048	0.003	0.097	0.015	6.4	0.1	23	
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	0.048	0.012	0.100	0.010	6.6	0.1	37	
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	0.048	0.016	0.093	0.019	6.4	0.1	33	
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	0.039	0.009	0.096	0.010	6.3	0.1	30	
SUGAR CREEK													
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	< 0.02	0.02	0.018	0.002	4.2	0.3	< 5	
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	0.047	0.037	0.044	0.002	3.2	0.0	< 5	
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	< 0.02	0.03	0.018	0.002	2.5	0.0	5	
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	< 0.02	0.01	0.012	0.001	3.5	0.0	< 5	
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	0.36	0.53	0.007	0.001	3.0	0.0	< 5	
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	< 0.02	0.00	0.010	0.001	3.1	0.1	6	
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	< 0.02	0.01	0.014	0.003	3.5	0.1	5	
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	< 0.02	0.03	0.021	0.003	2.9	0.1	15	
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	0.054	0.008	0.035	0.005	3.4	0.1	16	
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	0.11	0.12	0.048	0.002	3.7	0.0	26	
SUGAR CREEK TRIBUTARIES													
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	< 0.02	0.04	0.013	0.003	3.8	0.1	< 5	
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	< 0.02	0.03	0.015	0.001	3.5	0.0	< 5	
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	< 0.02	0.02	0.036	0.000	2.5	0.1	5	

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A31. Concentrations of major ions in grab samples collected on the synoptic trip of September 2001.

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average, SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Cl mg/L Avg SD	SO ₄ mg/L Avg SD	HCO ₃ + CO ₃ mg C/L Avg SD	Br µg/L Avg SD
IROQUOIS RIVER									
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	32 na	67 na	55.1 0.3	13 1
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	29 na	68 na	54.8 0.8	14 1
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	31 na	65 na	54.6 0.6	13 1
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	34 5	66 4	54.2 0.9	14 0
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	35 na	62 na	53.5 0.2	14 1
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	35 na	61 na	50.3 0.6	14 0
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	40 na	60 na	51.5 0.4	14 1
SUGAR CREEK									
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	21 1	69 3	58.9 0.7	10 0
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	17 na	83 na	60.7 0.4	11 0
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	16 na	107 na	62.7 0.7	14 0
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	26 na	108 na	60.5 1.1	14 0
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	24 na	108 na	55.2 0.0	10 2
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	18 na	89 na	57.3 0.2	9.5 0.5
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	21 1	88 3	56.0 0.5	9.4 1.5
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	20 na	72 na	59.2 0.8	8.6 0.8
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	22 na	68 na	59.7 0.7	8.9 1.3
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	20 na	60 na	58.6 0.3	8.9 1.5
SUGAR CREEK TRIBUTARIES									
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	33 na	98 na	62.6 0.3	14 0
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	15 1	50 1	54.8 1.0	7.4 1.4
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	20 na	40 na	64.0 0.1	8.7 0.0

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A31. Concentrations of major ions in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average, SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Na mg/L Avg SD	K mg/L Avg SD	Mg mg/L Avg SD	Ca mg/L Avg SD	SiO ₂ mg/L Avg SD					
IROQUOIS RIVER															
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	21	0	4.9	0.2	26	0	82	1	12	0
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	17	0	4.4	0.0	25	1	78	5	11	1
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	19	0	4.5	0.1	25	2	77	5	11	1
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	19	0	4.6	0.1	24	1	72	5	11	1
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	20	2	4.4	0.2	23	2	72	5	11	1
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	22	0	4.3	0.2	22	1	67	4	10	1
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	23	1	4.6	0.0	23	2	68	5	10	1
SUGAR CREEK															
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	14	1	3.0	0.1	28	1	74	2	11	0
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	12	0	2.5	0.1	30	1	80	2	9.2	0.2
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	11	0	2.3	0.0	32	0	88	2	8.7	0.2
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	14	0	2.6	0.1	32	1	90	4	8.8	0.2
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	11	1	2.2	0.1	28	1	75	1	7.0	0.5
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	11	0	2.3	0.0	30	1	81	5	7.9	0.5
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	11	0	2.5	0.2	31	2	82	4	8.1	0.0
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	9.3	0.4	2.2	0.0	31	1	79	3	9.2	0.4
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	11	1	2.2	0.1	31	1	79	4	9.5	0.5
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	11	0	2.3	0.1	31	1	78	0	10	1
SUGAR CREEK TRIBUTARIES															
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	18	1	2.3	0.1	31	1	93	3	9.8	0.2
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	6.9	0.7	2.0	0.1	28	2	64	4	8.4	0.8
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	6.2	0.4	1.5	0.0	36	1	85	0	11	1

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001.

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Al µg/L Avg SD	As µg/L Avg SD	B µg/L Avg SD	Ba µg/L Avg SD	Be µg/L Avg SD	Bi µg/L Avg SD			
IROQUOIS RIVER														
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	<0.3	0.8	100	0	69	2	<0.002	0.001	
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	1.2	0.1	0.0	95	8	76	4	<0.002	0.001
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	1.1	0.1	0.0	91	8	72	3	<0.002	0.001
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	1.6	0.6	0.0	96	6	71	4	<0.002	0.001
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	1.1	0.1	0.1	95	8	71	3	<0.002	0.000
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	1.1	0.1	0.0	94	8	68	3	<0.002	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	1.4	0.2	0.0	93	7	67	2	<0.002	0.001
SUGAR CREEK														
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	1.2	0.0	1.7	86	2	57	1	<0.001	0.000
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	1.0	0.2	1.3	88	3	54	1	<0.001	0.000
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	0.4	0.0	1.1	73	1	51	1	<0.001	0.000
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	0.3	0.1	1.1	62	1	58	1	<0.001	0.001
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	1.0	0.1	1.1	51	5	53	1	<0.002	0.000
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	0.9	0.1	1.1	61	5	50	3	<0.002	0.000
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	1.8	0.1	1.0	64	1	49	1	<0.002	0.000
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	1.2	0.0	1.1	66	4	47	2	<0.002	0.000
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	1.0	0.0	1.1	69	6	47	2	<0.002	0.001
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	1.5	0.2	1.2	71	6	46	3	<0.002	0.001
SUGAR CREEK TRIBUTARIES														
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	0.6	0.0	1.3	55	1	70	2	<0.001	0.001
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	1.3	0.1	1.0	64	7	35	1	<0.002	0.000
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	1.5	0.1	1.00	65	6	40	3	<0.002	0.000

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Cd µg/L		Ce µg/L		Co µg/L		Cr µg/L	
						Avg	SD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER													
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	< 0.006	0.005	0.015	0.000	< 0.005	0.017	< 0.3	0.9
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	< 0.006	0.005	0.024	0.001	< 0.005	0.002	< 0.3	0.0
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	< 0.006	0.005	0.022	0.000	0.53	0.02	< 0.3	0.0
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	< 0.006	0.004	0.022	0.001	< 0.005	0.014	< 0.3	0.1
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	< 0.006	0.001	0.023	0.001	< 0.005	0.010	< 0.3	0.2
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	< 0.006	0.002	0.022	0.001	< 0.005	0.008	< 0.3	0.1
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	< 0.006	0.003	0.022	0.001	0.094	0.026	< 0.3	0.1
SUGAR CREEK													
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	< 0.007	0.003	0.023	0.001	< 0.002	0.020	< 0.04	0.03
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	< 0.007	0.002	0.019	0.001	< 0.002	0.031	0.23	0.03
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	< 0.007	0.004	0.012	0.001	< 0.002	0.020	< 0.04	0.02
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	< 0.007	0.003	0.011	0.001	< 0.002	0.014	< 0.04	0.03
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	< 0.006	0.006	0.0090	0.0008	< 0.005	0.013	< 0.3	0.1
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	< 0.006	0.006	0.013	0.001	< 0.005	0.020	< 0.3	0.0
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	< 0.006	0.003	0.018	0.001	< 0.005	0.025	< 0.3	0.2
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	< 0.006	0.004	0.021	0.002	< 0.005	0.022	< 0.3	0.0
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	< 0.006	0.004	0.018	0.001	< 0.005	0.018	< 0.3	0.1
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	< 0.006	0.005	0.018	0.001	< 0.005	0.015	< 0.3	0.0
SUGAR CREEK TRIBUTARIES													
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	< 0.007	0.003	0.018	0.000	< 0.002	0.012	< 0.04	0.01
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	< 0.006	0.000	0.015	0.001	< 0.005	0.020	< 0.3	0.1
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	< 0.006	0.003	0.026	0.002	< 0.005	0.016	< 0.3	0.2

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Cs µg/L		Cu µg/L		Dy µg/L		Er µg/L		Eu µg/L	
						Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
IROQUOIS RIVER															
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	< 0.01	0.01	0.95	0.04	0.0014	0.0009	0.001	0.001	< 0.0008	0.0007
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	< 0.01	0.01	0.91	0.04	0.0050	0.0001	0.004	0.001	< 0.0008	0.0002
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	< 0.01	0.01	0.90	0.02	0.0042	0.0002	0.003	0.001	< 0.0008	0.0011
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	< 0.01	0.01	0.96	0.02	0.0057	0.0016	0.005	0.001	< 0.0008	0.0013
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	0.02	0.01	0.96	0.04	0.0043	0.0010	0.004	0.001	< 0.0008	0.0014
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	< 0.01	0.01	0.95	0.04	0.0052	0.0007	0.004	0.001	< 0.0008	0.0015
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	< 0.01	0.00	0.97	0.03	0.0047	0.0009	0.005	0.001	< 0.0008	0.0008
SUGAR CREEK															
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	< 0.009	0.001	0.59	0.04	0.0038	0.0004	0.003	0.000	< 0.0004	0.0003
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	< 0.009	0.000	0.49	0.04	0.0029	0.0001	0.003	0.000	< 0.0004	0.0007
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	< 0.009	0.004	0.39	0.03	0.0028	0.0002	0.002	0.001	< 0.0004	0.0006
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	< 0.009	0.003	0.58	0.02	0.0035	0.0008	0.002	0.000	< 0.0004	0.0009
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	< 0.01	0.01	0.98	0.05	0.0012	0.0005	< 0.001	0.001	0.0011	0.0011
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	< 0.01	0.01	0.85	0.02	0.0028	0.0008	0.003	0.001	0.0009	0.0016
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	< 0.01	0.01	1.0	0.1	0.0039	0.0005	0.002	0.000	0.0016	0.0018
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	< 0.01	0.01	0.90	0.02	0.0054	0.0003	0.004	0.001	0.0012	0.0013
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	< 0.01	0.00	0.91	0.05	0.0053	0.0006	0.004	0.002	< 0.0008	0.0000
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	< 0.01	0.01	0.92	0.05	0.0050	0.0006	0.004	0.001	< 0.0008	0.0002
SUGAR CREEK TRIBUTARIES															
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	< 0.009	0.002	0.69	0.05	0.0046	0.0006	0.003	0.000	< 0.0004	0.0001
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	< 0.01	0.01	1.1	0.1	0.0043	0.0002	0.002	0.001	0.0017	0.0005
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	< 0.01	0.01	0.85	0.09	0.0066	0.0009	0.005	0.002	0.0018	0.0006

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Fe µg/L Avg SD	Gd µg/L Avg SD	Hg ng/L Avg SD	Ho µg/L Avg SD	La µg/L Avg SD	Li µg/L Avg SD					
IROQUOIS RIVER																
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	14 1	0.004	0.001	1.3	0.2	0.0004	0.0004	0.010	0.000	6.0	0.3
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	21 3	0.007	0.001	1.4	0.2	0.0014	0.0002	0.016	0.001	5.7	0.1
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	12 1	0.007	0.001	1.3	0.1	0.0012	0.0003	0.013	0.000	5.5	0.3
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	9.8 0.8	0.007	0.001	0.9	0.1	0.0009	0.0004	0.014	0.001	5.6	0.2
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	10 1	0.007	0.001	1.3	0.1	0.0011	0.0003	0.014	0.000	5.7	0.2
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	7.7 0.6	0.009	0.001	1.3	0.1	0.0010	0.0002	0.014	0.000	5.4	0.3
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	8.1 1.0	0.008	0.000	2.7	0.1	0.0011	0.0003	0.014	0.000	5.3	0.2
SUGAR CREEK																
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	14 1	0.0049	0.0005	2.6	0.1	0.0011	0.0002	0.017	0.000	6.6	0.0
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	10 1	0.0043	0.0008	1.7	0.1	0.0010	0.0001	0.015	0.000	6.2	0.1
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	13 1	0.0044	0.0004	1.1	0.1	0.0009	0.0001	0.0090	0.0004	6.1	0.0
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	7 0	0.0043	0.0005	3.1	0.2	0.0010	0.0002	0.0079	0.0003	4.8	0.1
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	4.2 0.3	0.002	0.001	1.3	0.2	< 0.0003	0.0005	0.0060	0.0005	4.8	0.2
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	4.0 0.4	0.004	0.000	1.7	0.0	0.0008	0.0004	0.0095	0.0004	4.6	0.2
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	3.5 0.2	0.005	0.001	2.0	0.1	0.0012	0.0001	0.012	0.001	4.5	0.2
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	3.0 0.9	0.006	0.000	2.2	0.1	0.0010	0.0003	0.014	0.001	4.5	0.2
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	2.6 0.6	0.006	0.001	1.7	0.1	0.0008	0.0002	0.014	0.001	4.4	0.1
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	6.2 3.3	0.006	0.001	2.1	0.2	0.0012	0.0003	0.014	0.001	4.3	0.2
SUGAR CREEK TRIBUTARIES																
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	4 1	0.0064	0.0006	1.0	0.0	0.0011	0.0001	0.013	0.001	4.0	0.1
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	4.5 0.7	0.004	0.000	1.5	0.1	0.0006	0.0004	0.012	0.000	4.6	0.7
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	8.1 1.1	0.007	0.000	1.8	0.1	0.0013	0.0002	0.019	0.001	4.7	0.3

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Lu µg/L	Mn µg/L	Mo µg/L	Nd µg/L	Ni µg/L	Pb µg/L						
IROQUOIS RIVER																	
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	0.0007	0.0003	58	1	4.6	0.1	0.009	0.001	1.4	0.1	<0.02	0.01
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	0.0013	0.0003	80	2	4.5	0.1	0.017	0.000	1.4	0.1	0.06	0.02
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	0.0010	0.0002	86	1	4.7	0.1	0.016	0.001	1.6	0.0	0.04	0.01
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	0.0017	0.0003	86	2	4.5	0.1	0.015	0.001	1.4	0.1	0.04	0.02
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	0.0011	0.0003	86	3	4.4	0.1	0.018	0.002	1.2	0.1	0.05	0.01
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	0.0012	0.0001	110	0	4.8	0.1	0.016	0.000	1.5	0.2	0.05	0.01
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	0.0011	0.0002	100	0	4.7	0.0	0.018	0.002	1.4	0.1	0.04	0.00
SUGAR CREEK																	
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	0.0003	0.0002	59	1	7.7	0.0	0.020	0.002	1.6	0.3	0.08	0.02
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	0.0005	0.0002	74	2	6.6	0.0	0.016	0.000	1.4	0.5	0.06	0.01
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	0.0005	0.0001	68	1	5.6	0.0	0.009	0.001	1.3	0.2	0.05	0.01
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	0.0005	0.0002	39	1	5.5	0.0	0.010	0.001	1.2	0.2	0.07	0.02
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	<0.0005	0.0002	27	1	5.4	0.1	0.007	0.001	0.8	0.0	<0.02	0.01
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	<0.0005	0.0003	19	1	4.9	0.0	0.011	0.001	0.8	0.2	<0.02	0.01
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	<0.0005	0.0002	19	1	4.9	0.1	0.016	0.001	0.9	0.3	<0.02	0.01
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	<0.0005	0.0003	26	1	4.3	0.0	0.019	0.001	0.6	0.1	<0.02	0.01
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	<0.0005	0.0000	22	0	4.1	0.0	0.018	0.002	0.8	0.2	<0.02	0.01
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	<0.0005	0.0001	19	0	4.0	0.0	0.019	0.001	0.9	0.0	0.03	0.01
SUGAR CREEK TRIBUTARIES																	
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	0.0006	0.0001	66	2	5.7	0.1	0.016	0.001	1.2	0.4	0.11	0.02
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	<0.0005	0.0002	14	1	3.2	0.1	0.016	0.001	0.5	0.1	<0.02	0.00
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	<0.0005	0.0001	22	1	2.6	0.1	0.026	0.000	0.5	0.1	<0.02	0.01

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Pr µg/L	Rb µg/L	Re µg/L	Sb µg/L	Se µg/L	Sm µg/L						
IROQUOIS RIVER																	
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	0.0024	0.0003	1.6	0.0	0.012	0.001	0.15	0.00	<0.8	1.5	<0.002	0.001
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	0.0040	0.0004	1.5	0.0	0.014	0.001	0.14	0.00	<0.8	0.5	0.006	0.000
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	0.0037	0.0001	1.5	0.0	0.015	0.002	0.16	0.01	<0.8	0.2	0.004	0.000
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	0.0034	0.0001	1.4	0.0	0.014	0.002	0.16	0.01	0.8	0.5	0.004	0.001
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	0.0038	0.0002	1.3	0.0	0.015	0.001	0.16	0.01	<0.8	0.8	0.004	0.001
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	0.0038	0.0002	1.3	0.0	0.012	0.001	0.17	0.00	0.8	0.4	0.004	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	0.0036	0.0002	1.2	0.0	0.013	0.001	0.18	0.00	0.8	0.1	0.004	0.000
SUGAR CREEK																	
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	0.0043	0.0004	1.1	0.0	0.012	0.001	0.092	0.001	0.8	0.1	0.004	0.001
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	0.0035	0.0003	1.0	0.0	0.014	0.000	0.11	0.00	0.9	0.0	0.003	0.000
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	0.0021	0.0003	1.0	0.0	0.017	0.001	0.10	0.00	0.8	0.2	0.003	0.000
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	0.0023	0.0001	0.96	0.01	0.019	0.000	0.12	0.00	0.8	0.0	0.004	0.001
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	0.0016	0.0002	1.0	0.0	0.018	0.002	0.13	0.01	<0.8	0.6	<0.002	0.002
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	0.0024	0.0001	0.86	0.03	0.015	0.001	0.12	0.00	<0.8	0.4	0.003	0.001
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	0.0038	0.0001	0.87	0.03	0.015	0.001	0.13	0.00	<0.8	1.0	0.003	0.001
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	0.0041	0.0004	0.72	0.02	0.014	0.001	0.12	0.01	<0.8	0.5	0.005	0.001
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	0.0038	0.0002	0.69	0.01	0.012	0.001	0.13	0.00	<0.8	1.1	0.002	0.001
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	0.0042	0.0002	0.72	0.02	0.013	0.002	0.12	0.01	<0.8	1.1	0.005	0.001
SUGAR CREEK TRIBUTARIES																	
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	0.0033	0.0004	0.86	0.01	0.020	0.001	0.14	0.00	0.7	0.1	0.005	0.000
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	0.0034	0.0005	0.72	0.01	0.0093	0.0011	0.091	0.004	<0.8	0.5	0.003	0.001
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	0.0056	0.0000	0.38	0.01	0.0094	0.0014	0.077	0.004	<0.8	1.5	0.005	0.001

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Sr µg/L	Avg	SD	Ta µg/L	Avg	SD	Tb µg/L	Avg	SD	Te µg/L	Avg	SD	Th µg/L	Avg	SD	Ti µg/L	Avg	SD
IROQUOIS RIVER																							
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	340	0	0.018	0.003	< 0.0004	0.0001	< 0.0004	0.0001	< 0.0004	0.0001	< 0.0004	0.0001	< 0.0004	0.0001	< 0.0004	0.0001	< 0.0004	0.0001
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	330	0	< 0.006	0.005	0.0008	0.0002	0.0008	0.0002	< 0.004	0.01	0.0015	0.0003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	310	0	< 0.006	0.006	0.0007	0.0001	0.0007	0.0001	< 0.004	0.03	0.0011	0.0001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	300	0	< 0.006	0.003	0.0005	0.0001	0.0005	0.0001	< 0.004	0.02	0.0012	0.0005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	300	0	< 0.006	0.003	0.0007	0.0002	0.0007	0.0002	< 0.004	0.02	0.0012	0.0004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	280	0	< 0.006	0.001	0.0007	0.0003	0.0007	0.0003	< 0.004	0.02	0.0012	0.0004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	270	10	< 0.006	0.001	0.0008	0.0002	0.0008	0.0002	< 0.004	0.02	0.0012	0.0006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006
SUGAR CREEK																							
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	310	0	< 0.002	0.000	0.0007	0.0001	0.0007	0.0001	< 0.02	0.01	0.0013	0.0002	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	230	0	< 0.002	0.001	0.0005	0.0002	0.0005	0.0002	0.03	0.02	0.0008	0.0003	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	200	0	< 0.002	0.000	0.0006	0.0001	0.0006	0.0001	0.03	0.02	0.0006	0.0001	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	190	0	< 0.002	0.001	0.0007	0.0002	0.0007	0.0002	0.03	0.00	0.0008	0.0003	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	180	10	< 0.006	0.003	< 0.0004	0.0001	< 0.0004	0.0001	< 0.04	0.05	0.0005	0.0003	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	170	0	< 0.006	0.002	0.0006	0.0002	0.0006	0.0002	< 0.04	0.03	0.0006	0.0004	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	160	10	< 0.006	0.003	0.0005	0.0001	0.0005	0.0001	< 0.04	0.03	0.0006	0.0003	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	160	0	< 0.006	0.003	0.0006	0.0001	0.0006	0.0001	< 0.04	0.00	0.0010	0.0001	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	160	0	< 0.006	0.003	0.0007	0.0004	0.0007	0.0004	< 0.04	0.05	0.0008	0.0004	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	160	10	< 0.006	0.002	0.0008	0.0001	0.0008	0.0001	< 0.04	0.04	0.0009	0.0001	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
SUGAR CREEK TRIBUTARIES																							
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	190	0	< 0.002	0.000	0.0007	0.0002	0.0007	0.0002	0.03	0.02	0.0006	0.0001	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	140	10	< 0.006	0.003	< 0.0004	0.0001	< 0.0004	0.0001	< 0.04	0.00	0.0009	0.0005	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	130	10	< 0.006	0.002	0.0007	0.0001	0.0007	0.0001	< 0.04	0.03	0.0008	0.0006	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Tl µg/L		Tm µg/L		U µg/L		V µg/L		W µg/L		Y µg/L	
IROQUOIS RIVER																	
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	<0.004	0.002	<0.0003	0.0001	1.1	0.0	1.0	0.1	0.96	0.03	0.020	0.001
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	0.006	0.003	0.0007	0.0001	1.2	0.0	1.1	0.1	0.006	0.005	0.040	0.001
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	<0.004	0.001	0.0008	0.0001	1.2	0.0	1.1	0.0	0.010	0.009	0.037	0.001
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	<0.004	0.001	0.0008	0.0002	1.2	0.0	1.2	0.1	<0.005	0.001	0.038	0.001
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	<0.004	0.003	0.0009	0.0002	1.2	0.0	1.3	0.1	0.005	0.006	0.041	0.001
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	<0.004	0.002	0.0007	0.0001	1.1	0.0	1.4	0.1	0.006	0.002	0.038	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	<0.004	0.003	0.0007	0.0003	1.1	0.0	1.4	0.1	0.008	0.002	0.038	0.001
SUGAR CREEK																	
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	0.008	0.001	0.0004	0.0002	1.9	0.0	0.6	0.0	0.005	0.001	0.037	0.001
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	0.007	0.001	0.0004	0.0000	2.4	0.0	0.6	0.0	0.005	0.001	0.035	0.001
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	0.013	0.002	<0.0003	0.0000	2.6	0.1	0.4	0.0	0.006	0.003	0.027	0.001
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	0.015	0.002	0.0005	0.0001	2.7	0.1	0.3	0.0	0.006	0.002	0.031	0.001
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	0.012	0.002	<0.0003	0.0002	2.8	0.2	0.3	0.1	0.006	0.001	0.023	0.001
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	0.013	0.004	0.0004	0.0003	2.3	0.1	0.4	0.1	<0.005	0.003	0.033	0.001
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	0.012	0.004	0.0005	0.0002	2.2	0.1	0.5	0.1	<0.005	0.003	0.044	0.001
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	0.009	0.002	0.0005	0.0003	1.9	0.0	0.6	0.0	<0.005	0.004	0.050	0.001
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	0.013	0.006	0.0005	0.0002	1.8	0.0	0.6	0.1	0.006	0.002	0.048	0.001
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	0.012	0.006	0.0004	0.0001	1.7	0.1	0.7	0.1	0.006	0.004	0.048	0.003
SUGAR CREEK TRIBUTARIES																	
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	0.018	0.006	0.0006	0.0002	2.8	0.0	0.4	0.0	0.007	0.002	0.040	0.001
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	0.006	0.004	0.0003	0.0001	1.3	0.0	0.4	0.1	<0.005	0.002	0.041	0.003
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	0.005	0.005	0.0005	0.0003	1.3	0.1	0.6	0.1	<0.005	0.002	0.063	0.001

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A32. Concentrations of trace elements in grab samples collected on the synoptic trip of September 2001 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Yb µg/L		Zn µg/L		Zr µg/L	
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	0.003	0.001	0.8	0.1	0.093	0.003
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	0.007	0.000	0.8	0.3	0.064	0.002
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	0.005	0.000	28	3	0.063	0.004
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	0.007	0.000	0.8	0.1	0.063	0.004
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	0.006	0.000	1.1	0.3	0.064	0.003
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	0.007	0.001	5.2	0.2	0.064	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	0.006	0.000	1.2	0.4	0.079	0.020
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	0.0027	0.0003	1.1	0.3	0.047	0.003
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	0.0026	0.0002	1.6	0.3	0.031	0.002
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	0.0023	0.0003	0.9	0.1	0.027	0.002
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	0.0031	0.0004	1.1	0.2	0.032	0.000
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	<0.002	0.001	0.7	0.3	0.027	0.003
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	0.003	0.000	0.6	0.0	0.036	0.001
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	0.003	0.000	<0.4	0.2	0.19	0.02
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	0.004	0.001	0.7	0.4	0.038	0.003
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	0.004	0.001	0.5	0.2	0.037	0.001
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	0.004	0.000	1.0	0.3	0.034	0.003
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	0.0035	0.0003	0.9	0.1	0.042	0.002
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	0.003	0.000	0.5	0.0	0.034	0.004
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	0.003	0.000	2.1	0.9	0.035	0.003

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A33. Field measurements for samples collected on the synoptic trip of September 2001.

[km, kilometers, Q, discharge; cms, cubic meters per second; °C, degrees Celsius; µS/cm, microsiemens per centimeter; mg/L, milligrams per liter; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	pH	Temperature °C	Specific Conductance µS/cm	Dissolved Oxygen mg/L
IROQUOIS RIVER									
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	8.2	19.3	675	6.8
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	8.1	19.5	659	6.5
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	8.1	19.9	659	5.4
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	8.0	21.1	654	6.2
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	na	na	na	na
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	na	na	na	na
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	7.90	22.4	642	5.9
SUGAR CREEK									
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	na	na	na	na
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	na	na	na	na
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	na	na	na	na
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	na	na	na	na
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	na	na	na	na
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	8.04	21.4	656	9.6
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	8.05	23.6	667	9.7
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	8.0	22.5	660	8.6
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	8.0	20.3	663	7.8
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	8.0	21.0	659	7.5
SUGAR CREEK TRIBUTARIES									
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17				
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	8.09	22.3	594	10.2
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	8.0	20.1	675	8.6

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A34. Bacterial cell counts and chlorophyll-a concentrations in grab samples collected on the synoptic trip of September 2001.

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; mL, milliliters; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Q cms	Bacterial Cell Counts millions/mL	Chlorophyll-a concentrations µg/L
IROQUOIS RIVER							
IR01	Highway 55 gage, Ind.	0.0	09/13/01	08:30	1.03	2.10	6.07
IR02	Highway 16 bridge, Ind.	2.0	09/13/01	10:05	1.12	1.89	5.69
IR03	Brook, Ind.	5.9	09/13/01	11:20	1.35	1.67	6.56
IR04	Meridian Rd. bridge, Ind.	9.4	09/13/01	12:30	1.36	1.35	8.89
IR05	CR 100W bridge, Ind.	12.0	09/13/01	13:40	1.22	1.57	8.66
IR06	Highway 41 bridge, Ind.	16.5	09/13/01	14:15	1.26*	1.81	9.85
IR07	Newton Co. Fairgrounds, Ind.	21.1	09/13/01	15:20	1.31	1.13	13.6
SUGAR CREEK							
SC01	CR 400W bridge, Ind.	0.0	09/12/01	09:20	0.050	1.31	3.85
SC02	CR 600W bridge, Ind.	4.5	09/12/01	09:50	0.077	0.96	4.13
SC03	Highway 71 bridge, Ind.	9.8	09/12/01	11:20	0.15	1.12	4.78
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	09/12/01	12:30	0.40	0.69	3.40
SC05	CR 3000E bridge, Ill.	17.7	09/12/01	13:30	0.40	0.96	3.06
SC06	CR 2800E bridge, Ill.	21.4	09/12/01	15:00	0.55	1.15	3.25
SC07	CR 900N bridge, Ill.	26.9	09/12/01	16:45	0.63	0.77	2.65
SC08	CR 2440E bridge, Ill.	30.1	09/12/01	17:30	0.86	0.84	1.80
SC09	Milford, Ill.	34.4	09/12/01	19:10	0.94*	0.90	3.13
SC10	Above Mud Cr. #3, Ill.	37.8	09/12/01	19:40	1.01	0.87	2.06
SUGAR CREEK TRIBUTARIES							
SCT1	Mud Cr. #1, Ind.	11.7	09/12/01	11:40	0.17	0.27	4.79
SCT2	Mud Cr. #2, Ill.	21.2	09/12/01	14:40	0.11	1.51	2.38
SCT3	Unnamed trib., Ill.	28.5	09/12/01	17:10	0.16	0.34	na

¹ More complete explanations of these are found in table 1.

* These values are estimates.

Table A35. Concentrations of nutrients, dissolved organic carbon (DOC), and suspended sediment in grab samples collected on the synoptic trip of April 2002.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; mg/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	NO ₃ mg N/L Median MAD	NO ₂ mg N/L Median MAD	NH ₄ mg N/L Median MAD	Kjeldahl N mg N/L Value
IROQUOIS RIVER										
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	8.5 0.1	0.020 0.001	0.039 0.001	0.65
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	8.9 0.2	0.022 0.001	0.043 0.003	0.63
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	8.6 0.2	0.020 0.001	0.035 0.001	0.61
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	8.4 0.2	0.020 0.002	0.038 0.002	0.59
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	8.9 0.1	0.026 0.001	0.035 0.000	0.56
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	8.8 0.2	0.027 0.000	0.034 0.001	0.46
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	9.5 0.1	0.023 0.001	0.031 0.005	0.70
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	9.5 0.1	0.021 0.000	0.033 0.007	0.55
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	9.5 na	0.020 0.000	0.035 0.003	0.55
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	9.3 0.2	0.021 0.001	0.034 0.002	0.75
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	9.3 0.0	0.020 0.002	0.032 0.003	0.58
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	9.0 0.2	0.028 0.000	0.031 0.001	0.58
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	8.9 0.1	0.027 0.000	0.029 0.004	0.56
SUGAR CREEK										
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	8.8 0.2	0.013 0.002	0.021 0.001	0.25
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	8.8 0.1	0.006 0.000	0.031 0.003	0.26
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	8.8 0.0	0.007 0.000	0.020 0.003	0.24
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	04/04/02	10:25	5.15	8.3 0.0	0.013 0.001	0.023 0.001	0.22
SC05	CR 3000E bridge, Ill.	17.7	COF	04/04/02	10:50	5.41	8.2 0.0	0.014 0.000	0.022 0.004	0.21
SC06	CR 2800E bridge, Ill.	21.4	COF	04/04/02	11:40	6.63	8.7 0.0	0.005 0.001	0.019 0.004	0.22
SC07	CR 900N bridge, Ill.	26.9	COF	04/04/02	12:50	7.08	8.6 0.0	0.005 0.001	0.019 0.002	0.21
SC08	CR 2440E bridge, Ill.	30.1	COF	04/04/02	13:00	8.64	8.9 0.1	0.006 0.000	0.019 0.002	0.22
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	8.8 0.2	0.008 0.000	0.031 0.008	0.21
SUGAR CREEK TRIBUTARIES										
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	8.4 0.1	0.007 0.000	0.022 0.003	0.20
SCT2	Mud Cr. #2, Ill.	21.2	COF	04/04/02	11:15	1.29	11.0 0.2	0.006 0.001	0.019 0.003	0.16
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	12.3 0.4	0.009 0.001	0.027 0.004	0.18

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A35. Concentrations of nutrients, dissolved organic carbon (DOC), and suspended sediment in grab samples collected on the synoptic trip of April 2002 --- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; mg/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	PO ₄ mg P/L		P mg/L		DOC mg C/L		Suspended Sediment mg/L Value
							Median	MAD	Avg	SD	Avg	SD	
IROQUOIS RIVER													
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	0.03	0.02	0.058	0.002	6.06	0.14	9
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	0.03	0.00	0.045	0.004	6.05	0.08	8
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	0.06	0.00	0.045	0.000	5.84	0.13	9
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	0.05	0.01	0.048	0.003	5.59	0.20	6
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	0.05	0.00	0.046	0.007	5.35	0.07	5
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	0.05	0.00	0.051	0.004	5.18	0.13	<5
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	0.04	0.01	0.053	0.002	5.33	0.17	5
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	0.04	0.01	0.046	0.003	5.22	0.02	14
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	0.06	0.01	0.047	0.002	5.27	0.06	10
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	0.05	0.00	0.044	0.003	5.49	0.01	9
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	0.04	0.00	0.043	0.000	5.39	0.10	8
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	< 0.02	0.03	0.054	0.003	5.18	0.01	6
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	0.08	0.01	0.053	0.002	5.40	0.02	8
SUGAR CREEK													
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	0.04	0.01	0.015	0.001	2.55	0.10	22
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	0.03	0.00	0.018	0.002	2.56	0.01	16
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	0.03	0.00	0.012	0.003	2.27	0.11	18
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	04/04/02	10:25	5.15	0.04	0.01	na	na	2.37	0.11	17
SC05	CR 3000E bridge, Ill.	17.7	COF	04/04/02	10:50	5.41	0.04	0.00	0.008	0.003	2.34	0.05	16
SC06	CR 2800E bridge, Ill.	21.4	COF	04/04/02	11:40	6.63	0.03	0.00	0.009	0.001	2.20	0.03	18
SC07	CR 900N bridge, Ill.	26.9	COF	04/04/02	12:50	7.08	0.02	0.00	0.009	0.000	2.03	0.10	24
SC08	CR 2440E bridge, Ill.	30.1	COF	04/04/02	13:00	8.64	0.02	0.01	0.009	0.002	2.27	0.03	20
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	0.02	0.01	0.013	0.003	2.42	0.04	24
SUGAR CREEK TRIBUTARIES													
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	0.02	0.02	< 0.008	0.002	2.37	0.10	12
SCT2	Mud Cr. #2, Ill.	21.2	COF	04/04/02	11:15	1.29	< 0.02	0.00	< 0.008	0.002	2.05	0.05	8
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	0.02	0.01	0.009	0.001	1.81	0.04	8

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A36. Concentrations of major ions in grab samples collected on the synoptic trip of April 2002.

[km, kilometers; Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average, SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	Cl mg/L Avg SD	SO ₄ mg/L Avg SD	HCO ₃ + CO ₃ mg C/L Avg SD	Br µg/L Avg SD
IROQUOIS RIVER										
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	25 0	48 0	39.4	1.2 8.5 1.2
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	26 0	52 1	42.1	0.4 9.1 0.8
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	25 0	50 0	40.4	1.0 7.4 0.2
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	25 1	50 1	41.1	0.9 8.1 0.9
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	25 2	50 0	42.1	0.5 7.8 0.4
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	25 0	50 0	42.5	0.9 8.1 0.6
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	24 0	48 1	42.6	0.7 7.8 0.3
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	25 0	49 1	43.1	0.1 7.8 0.3
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	26 na	50 na	43.7	0.7 8.0 0.5
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	26 0	49 1	43.4	0.7 8.2 0.6
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	25 1	48 0	42.9	1.2 8.3 0.5
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	25 0	49 0	42.0	0.6 8.7 1.3
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	25 0	49 0	42.5	0.4 7.7 0.6
SUGAR CREEK										
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	17 1	40 0	47.4	0.5 5.3 0.2
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	17 1	42 0	48.4	0.3 5.9 0.4
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	17 1	46 0	48.9	0.4 6.3 0.0
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	04/04/02	10:25	5.15	18 1	53 0	49.9	1.3 na na
SC05	CR 3000E bridge, Ill.	17.7	COF	04/04/02	10:50	5.41	18 1	55 1	51.1	0.7 6.8 0.1
SC06	CR 2800E bridge, Ill.	21.4	COF	04/04/02	11:40	6.63	19 0	53 0	50.6	0.1 7.1 0.8
SC07	CR 900N bridge, Ill.	26.9	COF	04/04/02	12:50	7.08	19 0	52 1	51.5	0.1 6.9 0.0
SC08	CR 2440E bridge, Ill.	30.1	COF	04/04/02	13:00	8.64	19 0	51 1	51.7	0.1 6.5 0.0
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	19 0	50 1	51.1	0.7 7.1 0.8
SUGAR CREEK TRIBUTARIES										
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	21 1	58 1	53.1	0.7 7.5 0.3
SCT2	Mud Cr. #2, Ill.	21.2	COF	04/04/02	11:15	1.29	20 0	40 0	50.7	1.0 6.6 0.2
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	19 1	36 1	53.6	1.0 7.2 0.5

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A36. Concentrations of major ions in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers, Q, discharge; cms, cubic meters per second; mg/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average, SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	Na mg/L	K mg/L	Mg mg/L	Ca mg/L	SiO ₂ mg/L
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	7.8	0.1	2.4	0.0	0.0
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	8.2	0.2	2.1	0.0	0.0
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	8.1	0.0	2.2	0.0	0.0
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	7.9	0.1	2.2	0.1	0.0
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	8.0	0.3	2.1	0.1	0.0
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	8.0	0.1	2.1	0.0	0.0
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	7.4	0.2	2.3	0.0	0.0
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	7.4	0.3	2.0	0.0	0.0
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	8.1	0.3	2.0	0.0	0.0
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	7.4	0.3	1.9	0.0	0.0
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	7.8	0.3	2.1	0.2	0.0
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	7.8	0.1	2.1	0.0	0.0
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	7.6	0.2	2.1	0.1	0.0
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	4.9	0.3	0.99	0.01	0.0
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	5.2	0.2	1.0	0.0	0.0
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	4.8	0.1	1.0	0.1	0.0
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	04/04/02	10:25	5.15	na	na	na	na	na
SC05	CR 3000E bridge, Ill.	17.7	COF	04/04/02	10:50	5.41	5.6	0.2	1.0	0.1	0.0
SC06	CR 2800E bridge, Ill.	21.4	COF	04/04/02	11:40	6.63	5.5	0.1	0.97	0.04	0.0
SC07	CR 900N bridge, Ill.	26.9	COF	04/04/02	12:50	7.08	5.3	0.2	1.0	0.0	0.0
SC08	CR 2440E bridge, Ill.	30.1	COF	04/04/02	13:00	8.64	5.0	0.1	0.96	0.03	0.0
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	5.9	0.2	1.0	0.0	0.0
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	6.9	0.2	0.89	0.07	0.0
SCT2	Mud Cr. #2, Ill.	21.2	COF	04/04/02	11:15	1.29	4.4	0.2	0.81	0.06	0.0
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	4.4	0.3	0.76	0.06	0.0

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002.

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	Al µg/L	As µg/L	B µg/L	Ba µg/L	Be µg/L
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	5.4	0.1	0.50	0.02	0.009
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	3.9	0.7	0.48	0.04	0.007
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	3.8	0.0	0.47	0.02	0.010
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	3.6	0.1	0.48	0.01	0.008
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	2.9	0.1	0.51	0.02	0.006
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	3.0	0.1	0.52	0.01	0.005
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	2.8	0.1	0.50	0.00	0.005
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	2.9	0.2	0.48	0.02	0.008
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	2.8	0.0	0.48	0.03	0.004
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	3.1	0.3	0.45	0.00	0.006
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	3.1	0.0	0.45	0.01	0.009
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	2.9	0.1	0.47	0.02	0.006
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	2.6	0.1	0.47	0.00	0.001
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	1.3	0.1	0.41	0.02	0.005
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	0.86	0.02	0.40	0.01	0.003
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	0.92	0.00	0.39	0.01	0.006
SC04	Staline Rd. bridge, III.-Ind.	14.0	COF	04/04/02	10:25	5.15	na	na	na	na	na
SC05	CR 3000E bridge, III.	17.7	COF	04/04/02	10:50	5.41	1.1	0.1	0.39	0.03	0.015
SC06	CR 2800E bridge, III.	21.4	COF	04/04/02	11:40	6.63	0.80	0.03	0.38	0.00	0.002
SC07	CR 900N bridge, III.	26.9	COF	04/04/02	12:50	7.08	0.95	0.05	0.41	0.02	0.006
SC08	CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	8.64	0.89	0.03	0.42	0.02	0.009
SC09	Milford, III.	34.4	COF	04/04/02	13:40	9.83	0.89	0.02	0.43	0.01	0.006
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	0.91	0.07	0.37	0.03	0.005
SCT2	Mud Cr. #2, III.	21.2	COF	04/04/02	11:15	1.29	0.76	0.05	0.26	0.01	0.004
SCT3	Unnamed trib., III.	28.5	COF	04/04/02	12:10	0.61	1.1	0.0	0.36	0.00	0.005

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	Bi µg/L Avg	SD	Cd µg/L Avg	SD	Ce µg/L Avg	SD
IROQUOIS RIVER												
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	0.0022	0.0031	<0.009	0.001	0.039	0.001
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	0.0022	0.0019	<0.009	0.002	0.033	0.001
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	0.0035	0.0034	<0.009	0.002	0.035	0.001
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	0.0027	0.0020	<0.009	0.001	0.033	0.001
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	0.0034	0.0020	<0.009	0.001	0.026	0.001
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	0.0053	0.0037	<0.009	0.002	0.027	0.002
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	0.0011	0.0004	<0.009	0.000	0.024	0.001
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	0.0014	0.0015	<0.009	0.002	0.025	0.001
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	0.0009	0.0007	<0.009	0.002	0.027	0.001
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	0.0009	0.0005	<0.009	0.001	0.029	0.001
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	0.0020	0.0016	<0.009	0.002	0.027	0.001
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	0.0041	0.0031	<0.009	0.001	0.025	0.001
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	0.0031	0.0013	<0.009	0.002	0.025	0.001
SUGAR CREEK												
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	<0.0008	0.0000	<0.009	0.002	0.0086	0.0002
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	0.0021	0.0015	<0.009	0.002	0.015	0.001
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	<0.0008	0.0006	<0.009	0.002	0.015	0.001
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	04/04/02	10:25	5.15	na	na	na	na	na	na
SC05	CR 3000E bridge, Ill.	17.7	COF	04/04/02	10:50	5.41	0.0011	0.0015	<0.009	0.003	0.015	0.001
SC06	CR 2800E bridge, Ill.	21.4	COF	04/04/02	11:40	6.63	<0.0008	0.0005	<0.009	0.000	0.011	0.001
SC07	CR 900N bridge, Ill.	26.9	COF	04/04/02	12:50	7.08	0.0017	0.0027	<0.009	0.001	0.015	0.001
SC08	CR 2440E bridge, Ill.	30.1	COF	04/04/02	13:00	8.64	<0.0008	0.0001	<0.009	0.000	0.016	0.001
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	<0.0008	0.0004	<0.009	0.003	0.015	0.000
SUGAR CREEK TRIBUTARIES												
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	<0.0008	0.0010	<0.009	0.003	0.012	0.001
SCT2	Mud Cr. #2, Ill.	21.2	COF	04/04/02	11:15	1.29	0.0018	0.0012	<0.009	0.000	0.015	0.001
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	<0.0008	0.0006	<0.009	0.002	0.015	0.001

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	Co µg/L Avg SD	Cr µg/L Avg SD	Cs µg/L Avg SD	Cu µg/L Avg SD	Dy µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	0.18 0.04	< 0.3 0.1	< 0.01 0.01	0.94 0.04	0.0077 0.0002
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	0.13 0.02	0.5 0.1	< 0.01 0.00	0.94 0.04	0.0065 0.0003
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	0.17 0.05	< 0.3 0.2	< 0.01 0.01	0.93 0.01	0.0077 0.0010
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	0.16 0.04	< 0.3 0.1	< 0.01 0.00	0.88 0.02	0.0071 0.0010
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	0.14 0.04	< 0.3 0.1	< 0.01 0.01	0.85 0.04	0.0064 0.0006
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	0.13 0.04	< 0.3 0.1	< 0.01 0.00	0.83 0.04	0.0056 0.0009
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	0.14 0.05	< 0.3 0.1	< 0.01 0.00	0.89 0.03	0.0054 0.0004
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	0.13 0.03	< 0.3 0.1	< 0.01 0.00	0.86 0.02	0.0061 0.0008
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	0.15 0.04	< 0.3 0.2	< 0.01 0.00	0.82 0.00	0.0063 0.0005
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	0.14 0.04	< 0.3 0.2	< 0.01 0.00	0.85 0.03	0.0055 0.0007
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	0.12 0.02	< 0.3 0.1	< 0.01 0.01	0.87 0.04	0.0059 0.0008
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	0.12 0.05	< 0.3 0.3	< 0.01 0.00	0.85 0.02	0.0058 0.0001
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	0.14 0.06	< 0.3 0.0	< 0.01 0.00	0.85 0.02	0.0057 0.0004
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	0.13 0.04	< 0.3 0.1	< 0.01 0.01	0.39 0.01	0.0028 0.0002
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	0.13 0.05	< 0.3 0.0	< 0.01 0.00	0.40 0.04	0.0027 0.0004
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	0.10 0.02	< 0.3 0.2	< 0.01 0.01	0.40 0.01	0.0041 0.0001
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	04/04/02	10:25	5.15	na na	na na	na na	na na	na na
SC05	CR 3000E bridge, Ill.	17.7	COF	04/04/02	10:50	5.41	0.088 0.036	< 0.3 0.1	< 0.01 0.00	0.36 0.03	0.0032 0.0006
SC06	CR 2800E bridge, Ill.	21.4	COF	04/04/02	11:40	6.63	0.072 0.051	< 0.3 0.2	< 0.01 0.00	0.35 0.01	0.0042 0.0007
SC07	CR 900N bridge, Ill.	26.9	COF	04/04/02	12:50	7.08	0.088 0.033	< 0.3 0.1	< 0.01 0.00	0.36 0.02	0.0042 0.0013
SC08	CR 2440E bridge, Ill.	30.1	COF	04/04/02	13:00	8.64	0.099 0.025	< 0.3 0.1	< 0.01 0.00	0.37 0.02	0.0036 0.0005
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	0.10 0.05	< 0.3 0.1	< 0.01 0.00	0.37 0.02	0.0043 0.0002
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	0.11 0.04	< 0.3 0.1	0.02 0.00	0.37 0.01	0.0032 0.0008
SCT2	Mud Cr. #2, Ill.	21.2	COF	04/04/02	11:15	1.29	0.065 0.034	< 0.3 0.1	< 0.01 0.00	0.30 0.02	0.0033 0.0006
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	0.087 0.037	< 0.3 0.1	< 0.01 0.00	0.46 0.23	0.0044 0.0008

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	Er µg/L Avg SD	Eu µg/L Avg SD	Fe µg/L Avg SD	Gd µg/L Avg SD	Hg ng/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	0.0072 0.0011	0.0037 0.0029	17 1	0.011 0.001	1.4 0.0
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	0.0053 0.0010	0.0002 0.0017	15 1	0.0090 0.0014	1.5 0.1
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	0.0064 0.0004	0.0023 0.0029	14 0	0.010 0.002	1.2 0.2
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	0.0063 0.0011	0.0017 0.0025	14 0	0.0094 0.0011	1.4 0.0
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	0.0068 0.0004	0.0012 0.0027	9.2 0.3	0.0095 0.0011	2.2 0.1
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	0.0072 0.0002	<0.0001 0.0004	13 0	0.0086 0.0005	1.0 0.3
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	0.0052 0.0003	0.0018 0.0019	11 0	0.0082 0.0004	1.7 0.1
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	0.0056 0.0010	0.0006 0.0019	11 0	0.0080 0.0006	1.1 0.2
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	0.0054 0.0003	0.0024 0.0036	12 1	0.010 0.000	1.4 0.1
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	0.0062 0.0005	0.0008 0.0019	12 0	0.0085 0.0013	1.2 0.1
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	0.0063 0.0003	<0.0001 0.0014	12 0	0.0086 0.0005	1.3 0.1
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	0.0063 0.0012	<0.0001 0.0015	14 1	0.0085 0.0013	1.2 0.0
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	0.0061 0.0004	0.0024 0.0032	12 0	0.0093 0.0008	1.2 0.2
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	0.0021 0.0006	0.0012 0.0026	3.3 0.6	0.0047 0.0012	0.6 0.0
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	0.0023 0.0002	0.0012 0.0031	2.9 0.4	0.0053 0.0013	0.5 0.1
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	0.0026 0.0003	<0.0001 0.0021	3.0 0.8	0.0051 0.0007	0.7 0.1
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	04/04/02	10:25	5.15	na na	na na	na na	na na	0.5 0.1
SC05	CR 3000E bridge, Ill.	17.7	COF	04/04/02	10:50	5.41	0.0021 0.0004	<0.0001 0.0015	2.2 0.6	0.0053 0.0003	0.6 0.0
SC06	CR 2800E bridge, Ill.	21.4	COF	04/04/02	11:40	6.63	0.0021 0.0007	<0.0001 0.0023	3.3 1.8	0.0055 0.0013	0.5 0.1
SC07	CR 900N bridge, Ill.	26.9	COF	04/04/02	12:50	7.08	0.0031 0.0003	0.0002 0.0015	1.7 0.1	0.0047 0.0003	2.3 0.0
SC08	CR 2440E bridge, Ill.	30.1	COF	04/04/02	13:00	8.64	0.0020 0.0007	0.0009 0.0027	1.6 0.6	0.0060 0.0013	0.5 0.1
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	0.0032 0.0005	0.0017 0.0014	1.7 0.5	0.0064 0.0003	0.8 0.1
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	0.0023 0.0003	<0.0001 0.0020	2.5 0.0	0.0046 0.0005	0.5 0.1
SCT2	Mud Cr. #2, Ill.	21.2	COF	04/04/02	11:15	1.29	0.0027 0.0002	0.0002 0.0013	1.0 0.5	0.0054 0.0007	0.7 0.2
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	0.0027 0.0007	<0.0001 0.0011	1.3 0.8	0.0062 0.0004	0.5 0.1

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	Ho µg/L Avg SD	La µg/L Avg SD	Li µg/L Avg SD	Lu µg/L Avg SD	Mn µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	0.0019 0.0002	0.028 0.001	2.2 0.2 0.0018 0.0000	0.0000 13 0	
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	0.0016 0.0003	0.025 0.000	2.1 0.1 0.0017 0.0001	0.0001 9.7 0.7	
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	0.0019 0.0001	0.027 0.001	2.1 0.2 0.0017 0.0001	0.0001 12 0	
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	0.0017 0.0002	0.025 0.000	2.0 0.1 0.0018 0.0001	0.0001 12 0	
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	0.0014 0.0001	0.022 0.001	2.2 0.1 0.0019 0.0001	0.0001 10 0	
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	0.0017 0.0002	0.021 0.001	2.1 0.1 0.0018 0.0000	0.0000 9.1 0.2	
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	0.0016 0.0001	0.021 0.001	2.1 0.0 0.0015 0.0002	0.0002 4.5 0.0	
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	0.0016 0.0000	0.022 0.000	2.1 0.1 0.0016 0.0001	0.0001 7.1 0.1	
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	0.0017 0.0001	0.022 0.001	2.4 0.0 0.0017 0.0000	0.0000 9.0 0.1	
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	0.0015 0.0000	0.022 0.000	2.1 0.1 0.0014 0.0000	0.0000 8.9 0.0	
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	0.0015 0.0001	0.023 0.000	2.1 0.0 0.0016 0.0002	0.0002 8.3 0.0	
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	0.0017 0.0003	0.021 0.000	2.3 0.0 0.0016 0.0001	0.0001 7.9 0.1	
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	0.0014 0.0001	0.022 0.001	2.3 0.2 0.0015 0.0000	0.0000 6.9 0.0	
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	0.0006 0.0000	0.0083 0.0002	2.7 0.1 0.0003 0.0001	0.0001 23 0	
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	0.0009 0.0002	0.014 0.000	2.6 0.1 0.0004 0.0000	0.0000 19 0	
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	0.0008 0.0001	0.014 0.001	2.4 0.1 0.0003 0.0002	0.0002 16 0	
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	04/04/02	10:25	5.15	na na	na na	na na	na na	na na
SC05	CR 3000E bridge, Ill.	17.7	COF	04/04/02	10:50	5.41	0.0010 0.0001	0.015 0.001	2.4 0.0 0.0004 0.0001	0.0001 13 0	
SC06	CR 2800E bridge, Ill.	21.4	COF	04/04/02	11:40	6.63	0.0009 0.0002	0.013 0.001	2.5 0.0 0.0004 0.0001	0.0001 10 0	
SC07	CR 900N bridge, Ill.	26.9	COF	04/04/02	12:50	7.08	0.0009 0.0001	0.015 0.000	2.4 0.2 0.0006 0.0001	0.0001 7.3 0.1	
SC08	CR 2440E bridge, Ill.	30.1	COF	04/04/02	13:00	8.64	0.0008 0.0001	0.015 0.001	2.6 0.1 0.0005 0.0001	0.0001 8.0 0.0	
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	0.0010 0.0001	0.015 0.001	2.6 0.1 0.0005 0.0002	0.0002 7.6 0.1	
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	0.0007 0.0001	0.013 0.001	2.1 0.0 0.0004 0.0001	0.0001 17 0	
SCT2	Mud Cr. #2, Ill.	21.2	COF	04/04/02	11:15	1.29	0.0011 0.0000	0.018 0.000	2.5 0.1 0.0005 0.0001	0.0001 5.2 0.0	
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	0.0007 0.0001	0.016 0.001	3.0 0.1 0.0004 0.0001	0.0001 15 0	

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	Mo µg/L	Nd µg/L	Ni µg/L	Pb µg/L	Pr µg/L
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	2.4	0.1	0.036	0.003	0.0077
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	2.4	0.0	0.030	0.001	0.0064
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	2.6	0.0	0.031	0.001	0.0069
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	2.5	0.1	0.034	0.001	0.0068
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	2.4	0.0	0.027	0.002	0.0054
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	2.4	0.0	0.028	0.002	0.0054
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	2.4	0.0	0.026	0.000	0.0056
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	2.5	0.0	0.027	0.000	0.0054
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	2.5	0.0	0.027	0.002	0.0061
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	2.4	0.0	0.029	0.002	0.0058
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	2.4	0.0	0.028	0.000	0.0063
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	2.5	0.1	0.024	0.001	0.0057
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	2.5	0.1	0.025	0.001	0.0062
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	2.2	0.1	0.012	0.001	0.0019
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	2.2	0.1	0.016	0.001	0.0030
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	2.2	0.1	0.016	0.001	0.0033
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	04/04/02	10:25	5.15	na	na	na	na	na
SC05	CR 3000E bridge, Ill.	17.7	COF	04/04/02	10:50	5.41	2.2	0.0	0.017	0.001	0.0033
SC06	CR 2800E bridge, Ill.	21.4	COF	04/04/02	11:40	6.63	2.1	0.0	0.012	0.000	0.0028
SC07	CR 900N bridge, Ill.	26.9	COF	04/04/02	12:50	7.08	2.1	0.0	0.017	0.001	0.0035
SC08	CR 2440E bridge, Ill.	30.1	COF	04/04/02	13:00	8.64	2.1	0.0	0.019	0.002	0.0035
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	2.1	0.1	0.016	0.001	0.0038
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	2.4	0.0	0.013	0.001	0.0028
SCT2	Mud Cr. #2, Ill.	21.2	COF	04/04/02	11:15	1.29	1.3	0.0	0.019	0.001	0.0044
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	1.3	0.0	0.018	0.001	0.0038

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	Rb µg/L Avg SD	Re µg/L Avg SD	Sb µg/L Avg SD	Se µg/L Avg SD	Sm µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	0.57 0.01	0.012 0.000	0.11 0.00	0.8 0.1	0.0085 0.0011
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	0.53 0.02	0.012 0.002	0.11 0.00	0.9 0.1	0.0071 0.0012
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	0.53 0.01	0.012 0.001	0.10 0.01	0.8 0.1	0.0075 0.0013
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	0.52 0.00	0.013 0.001	0.095 0.001	0.9 0.0	0.0067 0.0003
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	0.48 0.01	0.013 0.001	0.094 0.002	0.8 0.1	0.0066 0.0007
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	0.47 0.01	0.012 0.000	0.094 0.003	0.9 0.1	0.0060 0.0007
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	0.45 0.00	0.012 0.000	0.092 0.001	0.9 0.1	0.0050 0.0012
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	0.45 0.01	0.012 0.001	0.097 0.002	0.9 0.0	0.0060 0.0008
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	0.49 0.00	0.012 0.000	0.095 0.001	0.9 0.1	0.0062 0.0010
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	0.47 0.01	0.012 0.000	0.099 0.001	0.9 0.1	0.0063 0.0009
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	0.47 0.00	0.013 0.001	0.097 0.005	0.9 0.1	0.0054 0.0001
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	0.45 0.01	0.013 0.001	0.100 0.003	0.9 0.2	0.0060 0.0007
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	0.45 0.01	0.012 0.000	0.097 0.003	0.8 0.1	0.0058 0.0003
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	0.26 0.01	0.0078 0.0003	0.073 0.003	0.9 0.0	0.0016 0.0004
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	0.29 0.01	0.0075 0.0006	0.072 0.004	1.0 0.1	0.0034 0.0007
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	0.29 0.00	0.0092 0.0002	0.074 0.002	1.0 0.1	0.0033 0.0008
SC04	Stateline Rd. bridge, III.-Ind.	14.0	COF	04/04/02	10:25	5.15	na na	na na	na na	na na	na na
SC05	CR 3000E bridge, III.	17.7	COF	04/04/02	10:50	5.41	0.27 0.00	0.010 0.000	0.076 0.004	0.9 0.1	0.0032 0.0010
SC06	CR 2800E bridge, III.	21.4	COF	04/04/02	11:40	6.63	0.24 0.00	0.0096 0.0003	0.075 0.003	0.9 0.1	0.0036 0.0008
SC07	CR 900N bridge, III.	26.9	COF	04/04/02	12:50	7.08	0.24 0.01	0.0091 0.0004	0.074 0.004	0.9 0.1	0.0036 0.0007
SC08	CR 2440E bridge, III.	30.1	COF	04/04/02	13:00	8.64	0.23 0.01	0.0087 0.0002	0.069 0.002	0.8 0.1	0.0028 0.0002
SC09	Milford, III.	34.4	COF	04/04/02	13:40	9.83	0.23 0.00	0.0088 0.0003	0.075 0.002	0.8 0.1	0.0036 0.0006
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	0.28 0.01	0.011 0.000	0.080 0.004	0.8 0.1	0.0040 0.0003
SCT2	Mud Cr. #2, Ill.	21.2	COF	04/04/02	11:15	1.29	0.19 0.00	0.0067 0.0006	0.051 0.002	0.8 0.1	0.0036 0.0006
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	0.18 0.01	0.0057 0.0008	0.044 0.003	0.6 0.1	0.0045 0.0010

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	Sr µg/L Avg SD	Ta µg/L Avg SD	Tb µg/L Avg SD	Te µg/L Avg SD	Th µg/L Avg SD				
IROQUOIS RIVER															
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	160 0	< 0.0004	0.0002	0.0012	0.0000	0.012	0.005	0.0059	0.0028
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	170 0	< 0.0004	0.0004	0.0011	0.0001	0.013	0.004	0.0043	0.0006
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	170 0	< 0.0004	0.0004	0.0011	0.0000	0.012	0.004	0.0089	0.0051
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	170 0	< 0.0004	0.0002	0.0009	0.0000	0.013	0.007	0.0074	0.0025
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	170 0	< 0.0004	0.0000	0.0011	0.0000	0.014	0.006	0.0050	0.0000
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	170 0	0.0005	0.0002	0.0010	0.0003	0.013	0.002	0.0063	0.0022
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	160 0	< 0.0004	0.0000	0.0009	0.0000	0.012	0.001	0.0028	0.0004
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	160 0	< 0.0004	0.0001	0.0010	0.0000	0.023	0.008	0.0032	0.0003
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	170 0	< 0.0004	0.0003	0.0009	0.0000	0.019	0.006	0.0049	0.0011
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	160 0	< 0.0004	0.0003	0.0010	0.0001	0.013	0.002	0.0052	0.0002
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	160 0	< 0.0004	0.0001	0.0010	0.0001	0.014	0.005	0.0057	0.0017
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	170 0	< 0.0004	0.0004	0.0010	0.0002	0.013	0.005	0.0081	0.0039
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	160 0	< 0.0004	0.0003	0.0009	0.0001	0.018	0.003	0.0049	0.0004
SUGAR CREEK															
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	120 0	< 0.0004	0.0001	0.0005	0.0001	0.014	0.005	0.0013	0.0006
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	120 0	< 0.0004	0.0002	0.0005	0.0001	0.019	0.011	0.0012	0.0002
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	120 0	< 0.0004	0.0003	0.0005	0.0001	0.016	0.002	0.0015	0.0008
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	04/04/02	10:25	5.15	na na	na na	na na	na na	na na	na na	na na	na na	na na
SC05	CR 3000E bridge, Ill.	17.7	COF	04/04/02	10:50	5.41	120 0	< 0.0004	0.0002	0.0006	0.0000	0.018	0.006	0.0019	0.0012
SC06	CR 2800E bridge, Ill.	21.4	COF	04/04/02	11:40	6.63	120 0	< 0.0004	0.0001	0.0006	0.0001	0.021	0.007	0.0018	0.0019
SC07	CR 900N bridge, Ill.	26.9	COF	04/04/02	12:50	7.08	120 0	< 0.0004	0.0002	0.0007	0.0001	0.019	0.000	0.0006	0.0003
SC08	CR 2440E bridge, Ill.	30.1	COF	04/04/02	13:00	8.64	120 0	< 0.0004	0.0002	0.0006	0.0000	0.020	0.003	0.0012	0.0009
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	120 0	< 0.0004	0.0003	0.0006	0.0001	0.023	0.002	0.0013	0.0005
SUGAR CREEK TRIBUTARIES															
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	120 0	< 0.0004	0.0001	0.0006	0.0001	0.017	0.001	0.0017	0.0008
SCT2	Mud Cr. #2, Ill.	21.2	COF	04/04/02	11:15	1.29	110 0	< 0.0004	0.0001	0.0006	0.0000	0.021	0.007	0.0015	0.0010
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	100 0	< 0.0004	0.0001	0.0008	0.0001	0.027	0.003	0.0010	0.0003

¹ More complete explanations of these are found in table 1.² Location is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	Ti µg/L Avg SD	Tl µg/L Avg SD	Tm µg/L Avg SD	U µg/L Avg SD	V µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	<0.6 0.1	0.007 0.000	0.0010 0.0001	1.9 0.0	0.4 0.1
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	<0.4 0.0	0.006 0.001	0.0009 0.0002	1.9 0.1	0.3 0.1
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	<0.6 0.1	0.006 0.001	0.0011 0.0000	1.9 0.1	0.4 0.2
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	<0.6 0.1	0.008 0.003	0.0010 0.0003	1.9 0.1	0.4 0.1
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	<0.6 0.3	0.008 0.004	0.0010 0.0001	1.9 0.1	0.5 0.3
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	<0.6 0.1	0.008 0.003	0.0009 0.0001	1.9 0.1	0.5 0.3
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	<0.4 0.1	0.006 0.001	0.0010 0.0001	1.8 0.0	0.4 0.1
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	<0.4 0.2	0.005 0.001	0.0011 0.0003	1.8 0.1	0.3 0.1
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	<0.4 0.2	0.006 0.002	0.0010 0.0002	1.9 0.0	0.3 0.1
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	<0.4 0.2	0.006 0.003	0.0009 0.0001	1.8 0.0	0.3 0.1
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	<0.4 0.1	0.006 0.001	0.0009 0.0001	1.8 0.0	0.4 0.1
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	<0.6 0.2	0.014 0.000	0.0011 0.0000	1.9 0.1	0.4 0.1
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	<0.4 0.0	0.007 0.002	0.0010 0.0000	1.9 0.0	0.4 0.0
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	<0.4 0.3	<0.003 0.001	0.0003 0.0002	1.9 0.1	0.4 0.1
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	<0.4 0.1	<0.003 0.002	0.0003 0.0001	2.0 0.0	0.4 0.1
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	<0.4 0.4	0.004 0.002	0.0003 0.0001	2.1 0.1	0.4 0.1
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	04/04/02	10:25	5.15	na na	na na	na na	na na	na na
SC05	CR 3000E bridge, Ill.	17.7	COF	04/04/02	10:50	5.41	<0.4 0.1	0.005 0.002	0.0003 0.0001	2.1 0.1	0.3 0.1
SC06	CR 2800E bridge, Ill.	21.4	COF	04/04/02	11:40	6.63	<0.4 0.2	0.008 0.007	0.0004 0.0001	1.9 0.1	0.3 0.0
SC07	CR 900N bridge, Ill.	26.9	COF	04/04/02	12:50	7.08	<0.4 0.2	0.004 0.001	0.0004 0.0001	1.9 0.0	0.3 0.1
SC08	CR 2440E bridge, Ill.	30.1	COF	04/04/02	13:00	8.64	<0.4 0.1	0.003 0.001	0.0004 0.0001	1.8 0.1	0.3 0.1
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	<0.4 0.2	0.005 0.002	0.0004 0.0001	1.8 0.1	0.3 0.1
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	<0.4 0.2	0.004 0.000	0.0003 0.0001	2.0 0.0	0.2 0.1
SCT2	Mud Cr. #2, Ill.	21.2	COF	04/04/02	11:15	1.29	<0.4 0.0	<0.003 0.001	0.0005 0.0001	1.1 0.0	<0.2 0.1
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	<0.4 0.1	0.003 0.001	0.0004 0.0001	0.96 0.01	0.2 0.0

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A37. Concentrations of trace elements in grab samples collected on the synoptic trip of April 2002 -- continued

[km, kilometers; Q, discharge; cms, cubic meters per second; µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	W µg/L Avg SD	Y µg/L Avg SD	Yb µg/L Avg SD	Zn µg/L Avg SD	Zr µg/L Avg SD
IROQUOIS RIVER											
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	0.003 0.001	0.058 0.001	0.0086 0.0002	13 0	0.13 0.00
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	0.004 0.000	0.049 0.002	0.0087 0.0007	2.3 0.1	0.10 0.00
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	0.003 0.000	0.055 0.001	0.0096 0.0001	8.6 0.2	0.12 0.00
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	0.003 0.001	0.056 0.002	0.0080 0.0010	14 0	0.098 0.011
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	0.002 0.001	0.050 0.001	0.0082 0.0011	10 0	0.091 0.004
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	0.002 0.001	0.048 0.001	0.0085 0.0001	16 0	0.082 0.002
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	0.003 0.001	0.047 0.001	0.0077 0.0007	10 0	0.082 0.001
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	0.002 0.000	0.051 0.001	0.0079 0.0004	33 1	0.085 0.002
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	0.002 0.001	0.049 0.000	0.0081 0.0005	4.6 0.2	0.085 0.001
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	0.003 0.002	0.051 0.001	0.0079 0.0003	7.7 0.0	0.085 0.001
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	0.004 0.001	0.050 0.001	0.0089 0.0006	14 0	0.090 0.006
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	0.007 0.000	0.050 0.001	0.0082 0.0003	5.1 0.2	0.098 0.013
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	0.003 0.001	0.048 0.002	0.0076 0.0010	7.2 0.2	0.089 0.003
SUGAR CREEK											
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	<0.002 0.001	0.029 0.001	0.0020 0.0002	13 0	0.030 0.002
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	<0.002 0.001	0.032 0.001	0.0020 0.0002	9.9 0.1	0.029 0.003
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	<0.002 0.001	0.034 0.000	0.0024 0.0001	5.4 0.1	0.029 0.001
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	04/04/02	10:25	5.15	na na	na na	na na	na na	na na
SC05	CR 3000E bridge, Ill.	17.7	COF	04/04/02	10:50	5.41	<0.002 0.001	0.038 0.001	0.0025 0.0005	5.4 0.0	0.028 0.003
SC06	CR 2800E bridge, Ill.	21.4	COF	04/04/02	11:40	6.63	0.002 0.001	0.037 0.001	0.0025 0.0005	3.9 0.2	0.025 0.003
SC07	CR 900N bridge, Ill.	26.9	COF	04/04/02	12:50	7.08	0.002 0.001	0.040 0.001	0.0024 0.0005	2.5 0.1	0.024 0.002
SC08	CR 2440E bridge, Ill.	30.1	COF	04/04/02	13:00	8.64	0.003 0.001	0.042 0.000	0.0029 0.0004	2.2 0.1	0.025 0.002
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	0.002 0.001	0.042 0.001	0.0025 0.0001	2.0 0.1	0.033 0.004
SUGAR CREEK TRIBUTARIES											
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	<0.002 0.002	0.034 0.001	0.0022 0.0007	3.3 0.2	0.018 0.004
SCT2	Mud Cr. #2, Ill.	21.2	COF	04/04/02	11:15	1.29	<0.002 0.000	0.037 0.001	0.0018 0.0006	1.2 0.2	0.021 0.006
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	0.002 0.002	0.040 0.002	0.0022 0.0005	2.2 0.2	0.022 0.003

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A38. Field measurements for samples collected on the synoptic trip of April 2002.

[km, kilometers; Q, discharge; cms, cubic meters per second; °C, degrees Celsius; µS/cm, microsiemens per centimeter; mg/L, milligrams per liter; COF, center of flow; LEW, left edge of water (facing downstream); m, meters; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Location	Date	Time	Q cms	pH	Temperature °C	Specific Conductance µS/cm	Dissolved Oxygen mg/L
IROQUOIS RIVER										
IR01	Highway 55 gage, Ind.	0.0	COF	04/03/02	11:05	36.8	7.87	5.65	544	13.7
IR01	Highway 55 gage, Ind.	0.0	Backwater	04/03/02	12:20	36.8	7.92	6.30	564	13.4
IR02	Highway 16 bridge, Ind.	2.0	COF	04/03/02	09:50	43.9	7.76	5.64	554	10.3
IR03	Brook, Ind.	5.9	COF	04/03/02	13:20	44.7	7.90	5.93	559	13.3
IR04	Meridian Rd. bridge, Ind.	9.4	COF	04/03/02	13:55	54.4	7.96	6.06	564	15.4
IR05	CR 100W bridge, Ind.	12.0	COF	04/03/02	14:25	47.0	7.92	6.16	566	15.4
IR05	CR 100W bridge, Ind.	12.0	6m LEW	04/03/02	15:05	47.0	7.93	7.58	566	14.7
IR05	CR 100W bridge, Ind.	12.0	17m LEW	04/03/02	15:20	47.0	7.97	6.92	565	15.1
IR05	CR 100W bridge, Ind.	12.0	34m LEW	04/03/02	15:30	47.0	7.96	6.23	564	15.1
IR05	CR 100W bridge, Ind.	12.0	50m LEW	04/03/02	14:50	47.0	7.97	6.20	566	15.0
IR05	CR 100W bridge, Ind.	12.0	70m LEW	04/03/02	15:00	47.0	7.97	6.35	566	14.9
IR06	Highway 41 bridge, Ind.	16.5	COF	04/03/02	16:00	51.0	7.99	6.33	564	14.5
IR07	Newton Co. Fairgrounds, Ind.	21.1	COF	04/03/02	16:30	53.5	8.04	6.83	560	14.5
SUGAR CREEK										
SC01	CR 400W bridge, Ind.	0.0	COF	04/04/02	08:30	1.25	7.87	4.52	553	12.9
SC02	CR 600W bridge, Ind.	4.5	COF	04/04/02	08:55	2.24	7.93	4.69	560	22.3
SC03	Highway 71 bridge, Ind.	9.8	COF	04/04/02	09:15	2.76	8.03	4.97	571	22.3
SC04	Stateline Rd. bridge, Ill.-Ind.	14.0	COF	04/04/02	10:25	5.15	8.17	5.22	597	12.9
SC05	CR 3000E bridge, Ill.	17.7	COF	04/04/02	10:50	5.41	8.14	5.74	576	7.7
SC06	CR 2800E bridge, Ill.	21.4	COF	04/04/02	11:40	6.63	8.26	5.32	601	7.1
SC07	CR 900N bridge, Ill.	26.9	COF	04/04/02	12:50	7.08	8.32	5.30	596	9.8
SC08	CR 2440E bridge, Ill.	30.1	COF	04/04/02	13:00	8.64	8.32	5.13	598	7.0
SC09	Milford, Ill.	34.4	COF	04/04/02	13:40	9.83	8.35	5.05	600	8.9
SUGAR CREEK TRIBUTARIES										
SCT1	Mud Cr. #1, Ind.	11.7	COF	04/04/02	09:50	2.13	8.13	4.99	624	19.3
SCT2	Mud Cr. #2, Ill.	21.2	COF	04/04/02	11:15	1.29	8.31	4.43	596	7.8
SCT3	Unnamed trib., Ill.	28.5	COF	04/04/02	12:10	0.61	8.39	4.86	610	9.7

¹ More complete explanations of these are found in table 1.

² Location is the position within the channel where the grab sample was collected.

Table A39. Concentrations of nutrients, dissolved organic carbon (DOC), and suspended sediment in miscellaneous grab samples.

[No discharge measurements were made; km, kilometers; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; mg/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	NO ₃ mg N/L		NO ₂ mg N/L		NH ₄ mg N/L		Kjeldahl N mg N/L
					Median	MAD	Median	MAD	Median	MAD	Value
DITCHES											
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	16.9	0.0	0.021	0.000	0.016	0.001	na
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	12.1	0.1	0.009	0.002	0.022	0.001	0.23
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	11.9	0.2	0.008	0.001	0.022	0.001	0.19
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	11.9	0.1	0.009	0.001	0.024	0.003	0.26
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	12.1	0.1	0.007	0.002	0.023	0.001	0.22
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	20.6	0.1	0.015	0.000	0.008	0.000	na
TILE DRAINS											
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	17.9	0.2	0.001	0.000	0.012	0.000	na
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	17.4	0.6	0.003	0.000	0.024	0.003	0.34
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	7.6	0.1	< 0.002	0.002	0.016	0.001	0.16
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	10.1	0.0	0.002	0.000	0.012	0.002	0.14
OTHER STREAMS											
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	16.9	0.8	0.030	0.000	0.046	0.001	na

¹ More complete explanations of these are found in tables 1 and 2

Table A39. Concentrations of nutrients, dissolved organic carbon (DOC), and suspended sediment in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers; mg N/L, milligrams per liter as nitrogen; mg P/L, milligrams per liter as phosphorus; mg C/L, milligrams per liter as carbon; mg/L, milligrams per liter; MAD, median absolute deviation (Rousseeuw, 1990); Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	PO ₄		P		DOC		Suspended Sediment	
					mg P/L Median	MAD	mg/L Avg	SD	mg C/L Avg	SD	mg/L Value	Value
DITCHES												
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.06	0.00	0.036	0.004	1.8	0.0		na
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.04	0.01	0.026	0.001	2.2	0.0		13
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.02	0.00	0.033	0.002	2.1	0.1		49
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	0.04	0.00	0.033	0.001	2.2	0.0		na
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	0.03	0.00	0.019	0.004	2.1	0.1		63
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	0.05	0.02	0.006	0.002	1.3	0.1		na
TILE DRAINS												
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	0.02	0.01	0.015	0.002	1.5	0.2		na
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	0.04	0.01	0.064	0.003	3.3	0.0		8
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.03	0.01	0.012	0.002	1.9	0.0		6
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.03	0.01	0.011	0.002	1.8	0.1		na
OTHER STREAMS												
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	0.03	0.00	0.044	0.004	3.2	0.1		na

¹ More complete explanations of these are found in tables 1 and 2

Table A40. Concentrations of major ions in miscellaneous grab samples.

[No discharge measurements were made; km, kilometers, mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average, SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Cl mg/L Avg SD	SO ₄ mg/L Avg SD	HCO ₃ + CO ₃ mg C/L Avg SD	Br µg/L Avg SD
DITCHES								
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	25 na	36 na	40.1	0.0 6.2 0.4
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	26 0	46 0	48.7	0.7 8.3 0.7
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	29 1	50 1	48.3	0.7 7.8 0.5
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	29 0	50 0	47.5	0.2 7.7 0.7
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	27 1	47 0	47.1	0.2 6.7 0.1
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	26 na	32 na	41.7	0.1 5.9 0.4
TILE DRAINS								
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	17 na	25 na	38.3	0.2 2.6 0.8
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	160 2	44 1	50.4	0.4 12 0
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	30 2	29 0	58.8	0.0 4.9 0.2
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	25 0	22 0	49.7	1.7 4.3 1.0
OTHER STREAMS								
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	22 na	37 na	35.1	0.1 5.0 0.2

¹ More complete explanations of these are found in tables 1 and 2

Table A40. Concentrations of major ions in miscellaneous grab samples.

[No discharge measurements were made; km, kilometers, mg/L, milligrams per liter; mg C/L, milligrams per liter as carbon; µg/L, micrograms per liter; Avg, average, SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Na mg/L Avg SD	K mg/L Avg SD	Mg mg/L Avg SD	Ca mg/L Avg SD	SiO ₂ mg/L Avg SD					
DITCHES														
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	6.9	0.3	1.1	0.1	25	1	69	2	7.2	0.4
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	8.9	0.1	0.94	0.03	24	0	74	1	6.7	0.1
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	10	0	1.1	0.0	25	0	74	0	6.6	0.0
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	10	0	1.1	0.0	25	0	73	0	6.6	0.1
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	7.8	0.1	0.91	0.04	25	0	74	1	6.6	0.1
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	5.7	0.2	0.6	0.0	27	1	74	3	6.7	0.4
TILE DRAINS														
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	4.1	0.1	0.3	0.0	27	1	59	1	8.5	0.3
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	78	0	1.2	0.0	29	0	90	1	7.6	0.1
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	6.7	0.1	0.43	0.01	26	1	78	1	8.3	0.1
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	3.2	0.1	0.34	0.01	22	0	71	0	6.6	0.1
OTHER STREAMS														
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	3.5	0.1	1.4	0.1	24	1	64	2	8.1	0.4

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples.

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Al µg/L		As µg/L		B µg/L		Ba µg/L		Be µg/L	
					Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
DITCHES														
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	2.2	0.1	0.31	0.05	31	1	36	1	0.009	0.003
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	1.1	0.1	0.31	0.00	25	1	37	0	0.006	0.003
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	1.0	0.0	0.32	0.01	29	1	35	0	0.008	0.005
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	1.0	0.0	0.32	0.02	28	2	35	0	<0.005	0.004
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	0.88	0.05	0.31	0.01	23	0	35	0	<0.005	0.005
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	1.7	0.1	0.14	0.02	20	2	34	2	0.009	0.005
TILE DRAINS														
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	5.3	0.2	0.14	0.04	28	6	24	1	<0.007	0.007
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	1.3	0.0	0.73	0.03	19	0	50	0	<0.005	0.002
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.56	0.01	0.21	0.01	16	1	30	0	0.005	0.003
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.31	0.02	0.15	0.02	14	1	25	0	<0.005	0.002
OTHER STREAMS														
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	2.0	0.2	0.38	0.03	33	5	34	0	<0.007	0.005

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Bi µg/L		Cd µg/L		Ce µg/L		Co µg/L	
					Avg	SD	Avg	SD	Avg	SD	Avg	SD
DITCHES												
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.004	0.002	0.010	0.001	0.018	0.000	<0.002	0.013
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.0013	0.0019	<0.009	0.001	0.016	0.001	0.091	0.031
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.0010	0.0010	<0.009	0.001	0.016	0.001	0.10	0.04
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	<0.0008	0.0006	<0.009	0.000	0.018	0.001	0.12	0.04
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	<0.0008	0.0006	<0.009	0.000	0.016	0.000	0.15	0.05
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	0.004	0.003	0.009	0.002	0.016	0.003	<0.002	0.022
TILE DRAINS												
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	<0.001	0.001	0.008	0.006	0.014	0.002	<0.002	0.017
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	<0.0008	0.0001	<0.009	0.000	0.021	0.000	0.099	0.027
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	<0.0008	0.0013	<0.009	0.001	0.0082	0.0002	0.072	0.035
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.0054	0.0010	<0.009	0.001	0.0058	0.0001	0.078	0.041
OTHER STREAMS												
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	0.002	0.000	0.049	0.006	0.021	0.001	<0.002	0.016

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Cr µg/L		Cs µg/L		Cu µg/L		Dy µg/L		Er µg/L	
					Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
DITCHES														
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	< 0.2	0.1	< 0.002	0.000	0.90	0.04	0.0042	0.0006	0.0025	0.0002
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	< 0.3	0.2	< 0.01	0.00	0.42	0.01	0.0051	0.0005	0.0035	0.0006
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	< 0.3	0.1	< 0.01	0.00	0.42	0.00	0.0036	0.0002	0.0037	0.0009
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	< 0.3	0.2	< 0.01	0.00	0.42	0.03	0.0037	0.0001	0.0027	0.0005
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	< 0.3	0.2	< 0.01	0.00	0.45	0.06	0.0035	0.0001	0.0030	0.0007
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	< 0.2	0.0	< 0.002	0.001	0.58	0.04	0.0029	0.0007	0.0020	0.0002
TILE DRAINS														
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	< 0.2	0.1	< 0.002	0.001	0.59	0.02	0.0033	0.0006	0.0020	0.0005
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	< 0.3	0.0	< 0.01	0.01	0.36	0.04	0.0050	0.0004	0.0039	0.0004
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	< 0.3	0.2	< 0.01	0.00	0.33	0.02	0.0033	0.0012	0.0024	0.0007
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	< 0.3	0.0	< 0.01	0.00	0.32	0.03	0.0023	0.0004	0.0016	0.0002
OTHER STREAMS														
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	< 0.2	0.1	< 0.002	0.000	1.1	0.0	0.0044	0.0008	0.0041	0.0012

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Eu µg/L Avg	SD	Fe µg/L Avg	SD	Gd µg/L Avg	SD	Hg ng/L Avg	SD	Ho µg/L Avg	SD
DITCHES														
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.0003	0.0008	< 2	2	0.0029	0.0006	2.0	0.2	0.0009	0.0002
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.0006	0.0006	1.0	0.1	0.0053	0.0015	1.3	0.1	0.0009	0.0002
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.0003	0.0007	1.0	0.6	0.0058	0.0010	0.7	0.1	0.0008	0.0000
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	0.0014	0.0023	1.0	0.0	0.0065	0.0011	0.8	0.1	0.0009	0.0000
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	0.0015	0.0027	1.2	0.4	0.0057	0.0012	1.0	0.0	0.0008	0.0002
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	0.0002	0.0010	< 2	2	0.0024	0.0007	1.1	0.2	0.0006	0.0002
TILE DRAINS														
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	0.0007	0.0004	< 2	2	0.0035	0.0007	< 0.3	0.3	0.0005	0.0001
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	0.0010	0.0028	3.2	0.4	0.0065	0.0009	2.6	0.2	0.0011	0.0002
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.0005	0.0017	< 0.7	0.5	0.0053	0.0008	0.6	0.1	0.0009	0.0002
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.0008	0.0025	< 0.7	1.2	0.0041	0.0006	0.7	0.1	0.0005	0.0001
OTHER STREAMS														
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	< 0.0002	0.0005	< 2	3	0.0042	0.0004	na	na	0.0013	0.0002

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	La µg/L		Li µg/L		Lu µg/L		Mn µg/L		Mo µg/L		Nd µg/L	
					Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
DITCHES																
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.013	0.001	1.7	0.1	0.0005	0.0001	6.2	1.0	2.1	0.1	0.017	0.002
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.017	0.001	1.9	0.0	0.0007	0.0002	4.8	0.1	1.8	0.0	0.019	0.001
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.016	0.001	2.2	0.0	0.0007	0.0002	4.7	0.0	2.0	0.0	0.018	0.001
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	0.017	0.000	2.2	0.0	0.0006	0.0001	5.9	0.0	2.0	0.0	0.021	0.001
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	0.016	0.000	2.1	0.0	0.0006	0.0002	4.9	0.1	1.9	0.1	0.019	0.001
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	0.014	0.001	1.8	0.1	0.0004	0.0001	3.5	0.6	2.0	0.0	0.014	0.003
TILE DRAINS																
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	0.021	0.001	3.7	0.1	0.0003	0.0001	0.07	0.02	1.8	0.1	0.021	0.001
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	0.024	0.001	2.9	0.1	0.0007	0.0001	1.8	0.0	2.3	0.0	0.027	0.002
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.019	0.001	1.7	0.0	0.0005	0.0002	0.2	0.0	1.4	0.0	0.022	0.001
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.014	0.000	1.6	0.1	0.0002	0.0000	0.1	0.0	1.3	0.0	0.014	0.002
OTHER STREAMS																
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	0.017	0.000	2.2	0.2	0.0011	0.0002	6.1	1.1	2.3	0.0	0.020	0.002

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Ni µg/L		Pb µg/L		Pr µg/L		Rb µg/L		Re µg/L	
					Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
DITCHES														
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	< 0.5	0.5	0.017	0.004	0.0037	0.0002	0.24	0.01	0.0100	0.0005
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	< 0.8	0.2	0.013	0.001	0.0038	0.0001	0.21	0.00	0.0097	0.0003
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	< 0.8	0.2	0.009	0.002	0.0041	0.0004	0.27	0.00	0.0107	0.0006
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	0.8	1.0	0.010	0.002	0.0037	0.0002	0.27	0.00	0.0103	0.0002
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	< 0.8	0.3	< 0.004	0.002	0.0037	0.0001	0.23	0.00	0.0101	0.0005
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	< 0.5	0.5	0.020	0.003	0.0029	0.0001	0.19	0.00	0.0121	0.0007
TILE DRAINS														
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	< 0.5	0.5	0.006	0.001	0.0049	0.0003	0.14	0.01	0.0101	0.0011
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	< 0.8	0.3	0.011	0.003	0.0058	0.0003	0.19	0.00	0.0170	0.0010
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	< 0.8	1.6	< 0.004	0.003	0.0044	0.0001	0.14	0.00	0.0074	0.0007
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	< 0.8	0.4	0.007	0.009	0.0032	0.0000	0.12	0.00	0.0098	0.0004
OTHER STREAMS														
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	< 0.5	0.6	0.034	0.003	0.0042	0.0002	0.27	0.01	0.0122	0.0006

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Sb		Se		Sm		Sr		Ta	
					Avg	SD	µg/L	Avg	SD	µg/L	Avg	SD	µg/L	Avg
DITCHES														
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.091	0.007	1.0	0.0	0.0031	0.0003	127	3	< 0.01	0.01
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.078	0.001	1.2	0.1	0.0039	0.0009	140	0	< 0.0004	0.0001
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.087	0.004	1.0	0.0	0.0038	0.0006	140	0	< 0.0004	0.0002
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	0.089	0.002	0.9	0.1	0.0040	0.0007	140	0	< 0.0004	0.0002
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	0.088	0.003	1.1	0.0	0.0036	0.0003	140	0	< 0.0004	0.0001
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	0.064	0.018	1.0	0.1	0.0026	0.0006	133	2	< 0.01	0.01
TILE DRAINS														
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	0.039	0.005	1.1	0.0	0.0037	0.0003	112	2	< 0.01	0.01
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	0.065	0.005	1.0	0.1	0.0057	0.0004	220	0	< 0.0004	0.0002
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.050	0.002	0.8	0.1	0.0036	0.0005	120	0	< 0.0004	0.0000
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.053	0.005	1.0	0.0	0.0024	0.0005	110	0	< 0.0004	0.0004
OTHER STREAMS														
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	0.103	0.009	1.4	0.0	0.0036	0.0003	128	2	< 0.01	0.01

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Tb µg/L		Te µg/L		Th µg/L		Ti µg/L		Tl µg/L	
					Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
DITCHES														
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.0006	0.0001	<0.02	0.00	0.0010	0.0005	0.1	0.1	0.011	0.003
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.0007	0.0001	0.022	0.004	0.0014	0.0002	<0.4	0.2	0.005	0.001
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.0007	0.0000	0.019	0.004	0.0027	0.0018	<0.4	0.1	0.005	0.000
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	0.0007	0.0001	0.021	0.002	0.0028	0.0011	<0.4	0.2	0.005	0.001
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	0.0005	0.0001	0.022	0.007	0.0020	0.0004	<0.4	0.1	0.005	0.002
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	0.0004	0.0001	<0.02	0.01	0.0007	0.0002	<0.1	0.1	0.007	0.001
TILE DRAINS														
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	0.0005	0.0002	<0.02	0.00	0.0010	0.0004	0.1	0.1	0.005	0.001
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	0.0009	0.0001	0.014	0.005	0.0029	0.0003	<0.4	0.1	<0.003	0.000
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.0006	0.0001	0.019	0.005	0.0016	0.0011	<0.4	0.0	<0.003	0.000
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.0005	0.0001	0.022	0.003	0.011	0.000	<0.4	0.2	0.005	0.002
OTHER STREAMS														
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	0.0007	0.0000	<0.02	0.01	0.0011	0.0001	0.1	0.0	0.011	0.003

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Tm		U		V		W		Y	
					Avg	SD	Avg	SD	Avg	SD	Avg	SD	Avg	SD
DITCHES														
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.0005	0.0001	1.1	0.0	0.3	0.3	<0.08	0.00	0.030	0.001
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.0006	0.0001	1.5	0.0	0.3	0.0	<0.002	0.001	0.042	0.001
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.0006	0.0000	1.5	0.0	0.3	0.0	<0.002	0.001	0.038	0.001
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	0.0005	0.0002	1.5	0.0	0.3	0.0	<0.002	0.001	0.039	0.001
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	0.0004	0.0001	1.5	0.0	0.3	0.1	<0.002	0.000	0.038	0.001
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	0.0004	0.0001	1.2	0.0	<0.2	0.1	<0.08	0.03	0.022	0.000
TILE DRAINS														
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	0.0002	0.0001	1.0	0.0	<0.2	0.1	<0.08	0.03	0.023	0.001
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	0.0005	0.0001	1.7	0.0	0.7	0.0	0.003	0.001	0.039	0.002
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.0004	0.0001	1.2	0.0	0.2	0.0	<0.002	0.000	0.031	0.001
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.0002	0.0000	1.4	0.0	0.2	0.1	<0.002	0.001	0.021	0.000
OTHER STREAMS														
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	0.0007	0.0001	1.3	0.0	0.3	0.1	<0.08	0.04	0.033	0.001

¹ More complete explanations of these are found in tables 1 and 2

Table A41. Concentrations of trace elements in miscellaneous grab samples -- continued

[No discharge measurements were made; km, kilometers, µg/L, micrograms per liter; ng/L, nanograms per liter; Avg, average; SD, standard deviation; <, less than; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	Yb µg/L		Zn µg/L		Zr µg/L	
DITCHES										
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	0.0043	0.0000	0.5	0.1	0.032	0.003
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	0.0029	0.0001	11	0	0.046	0.011
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	0.0031	0.0004	3.7	0.2	0.039	0.006
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	0.0031	0.0002	2.4	0.1	0.036	0.002
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	0.0027	0.0005	5.0	0.2	0.026	0.003
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	0.0020	0.0002	0.4	0.2	0.014	0.003
TILE DRAINS										
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	0.0021	0.0002	2.6	0.1	0.012	0.003
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	0.0043	0.0007	2.0	0.1	0.039	0.002
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	0.0023	0.0006	0.53	0.04	0.018	0.000
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	0.0009	0.0001	1.2	0.0	0.017	0.003
OTHER STREAMS										
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	0.0052	0.0003	4.2	0.0	0.054	0.007

¹ More complete explanations of these are found in tables 1 and 2

Table A42. Field measurements for miscellaneous grab samples.

[No discharge measurements were made; km, kilometers, °C, degrees Celsius; µS/cm, microsiemens per centimeter; mg/L, milligrams per liter; na, not available]

Site Name ¹	Site Location ¹	Dist. ¹ km	Date	Time	pH	Temperature °C	Specific Conductance µS/cm	Dissolved Oxygen mg/L
DITCHES								
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/20/99	15:55	na	na	na	na
MG04	Montgomery Ditch @ CR 1275 S, Ind.	1.0	04/03/02	17:15	8.22	6.85	619	18.6
MG03	Montgomery Ditch @ CR 500 W, Ind.	3.8	04/03/02	17:30	8.21	7.19	625	18.3
MG02	Montgomery Ditch @ CR 400W, Ind.	5.4	04/03/02	17:50	8.23	7.27	582	18.8
MG01	Montgomery Ditch @ RR Bridge, Ind.	6.2	04/03/02	18:20	8.24	7.00	610	21.7
MR01	Morrison Ditch @ CR 1400S, Ind.	9.4	04/20/99	15:30	na	na	na	na
TILE DRAINS								
TD01	Tile Drain on Ill. Highway 1	na	04/20/99	10:50	na	na	na	na
ID01	Tile Drain @ IR01, Ind.	na	04/03/02	12:35	7.65	6.10	1079	16.3
ID02	Tile Drain @ IR07, Ind.	na	04/03/02	16:55	8.07	6.04	618	17.5
TD02	Tile Drain @ MG02, Ind.	na	04/03/02	18:10	7.90	5.26	556	21.2
OTHER STREAMS								
CO01	Coon Cr. @ mouth, Ill.	na	04/20/99	11:15	na	na	na	na

¹ More complete explanations of these are found in tables 1 and 2